**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ**

**СХІДНОУКРАЇНСЬКИЙ НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ ІМЕНІ ВОЛОДИМИРА ДАЛЯ**


# ЗБІРКА МАТЕРІАЛІВ
# VII ВСЕУКРАЇНСЬКОЇ СТУДЕНТСЬКОЇ НАУКОВО-ПРАКТИЧНОЇ ІНТЕРНЕТ-КОНФЕРЕНЦІЇ
# «МОВА І СВІТ: МОВОЗНАВЧІ, ЛІТЕРАТУРОЗНАВЧІ І ПЕРЕКЛАДОЗНАВЧІ АСПЕКТИ ВЗАЄМОДІЇ»

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ДО ЗБІРКИ УВІЙШЛИ МАТЕРІАЛИ VII ВСЕУКРАЇНСЬКОЇ СТУДЕНТСЬКОЇ НАУКОВО-ПРАКТИЧНОЇ ІНТЕРНЕТ-КОНФЕРЕНЦІЇ «МОВА І СВІТ: МОВОЗНАВЧІ, ЛІТЕРАТУРОЗНАВЧІ І ПЕРЕКЛАДОЗНАВЧІ АСПЕКТИ ВЗАЄМОДІЇ», ЩО ВІДБУЛАСЯ *25 КВІТНЯ 2025 РОКУ* В СХІДНОУКРАЇНСЬКОМУ НАЦІОНАЛЬНОМУ УНІВЕРСИТЕТІ ІМ. В. ДАЛЯ (М. КИЇВ)

# ЗМІСТ

*Секція 2: Практичні питання галузевого перекладу*

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## TRANSLATION STUDIES IN UKRAINE IN THE 20TH CENTURY

The foundation of translation studies in Ukraine is closely associated with Ivan Franko, who collaborated with the German Romantic school of translation. According to researcher L. Hryhoriieva, «In terms of the volume and variety of works translated from the world's literatures across different eras, Ivan Franko had no equal in any other literature. He translated nearly 200 works into Ukrainian, ranging from masterpieces of antiquity and the Middle Ages to the best literary examples of the early 20th century. His work includes approximately 30 major works and countless poems from German literature, over 40 prose and dramatic works from English literature, around 20 prose and 60 poetic pieces from French literature, and about 30 prose and 30 poetic works from Russian literature». O. Biletskyi described Franko not only as a translator but also as a remarkable original author who shattered the traditional view that Ukrainian literature should exist solely for domestic, family reading. Franko opened a gateway for Ukrainians to Europe and beyond, bringing them closer to global culture—a feat especially daring at the time, given prevailing opinions that Ukrainian literature was fit only for limited, local consumption.

I. Franko's cultural vision was distinctly national and Ukrainian-centered, focusing on expanding the intellectual and cultural horizons of his people. To him, cultural and spiritual development was the main criterion for national progress. V. Mazepa's research highlights how I. Franko, through the lenses of social philosophy and the historiography of Ukraine, addressed the concept of nation-building. He emphasized the importance of self-awareness for a nation's existence, the necessity of a well-structured, multilayered society, and the vital role of civil society in national self-organization. He also advocated for the careful integration of foreign cultural values to

strengthen the national identity.

I. Franko developed clear theoretical principles through his enormous translation work. Summarized by scholar F. Arvat, these principles include literary translation as a crucial means of intercultural communication, enriching the literatures and languages of different peoples. A translated work should be treated as an integral part of the target literature. Only works that elevate public consciousness, enhance cultural levels, and enrich the native language should be translated. A translator must aspire to the level of a creative artist, preserving the semantic nuances of the original and choosing equivalents based on meaning rather than sound. The quality of a translation often depends on the translator's inner connection with the original author. Translations must use the literary language, avoiding dialects and jargon, and should always preserve the national flavor of the original. Translators must work based on deep linguistic and cultural analysis of the text and its historical and societal context.

I. Franko viewed translation as a powerful tool for bringing nations closer together and broadening cultural understanding. He believed that just as poetry enriches an individual's soul with experiences they may never encounter in ordinary life, so too does translated literature enrich the spirit of an entire nation by opening up new worlds of feeling and thought.

I. Franko devoted over 100 scholarly articles, reviews, and reports to issues of translation. This number is likely even higher, given additional volumes of his work published later. He also addressed theoretical issues of translation in his prefaces to translations he edited and issued, such as his extensive reworking of Panteleimon Kulish's translations of Shakespeare and his commentary on translations of Heinrich Heine's works by O. Cherniakhivsky.

I. Franko did not limit himself to theoretical writings; he provided critical reviews of translations into Ukrainian from world literature, offering valuable observations on translation practices. Notably, he critiqued the German translations of Taras Shevchenko's works by S. Spoinarovsky and other important translation efforts.

Despite the challenges of his time, including working with a readership that often lacked sufficient education, I. Franko worked to make world literature accessible to

ordinary Ukrainians. When necessary, he adapted translations to the understanding of his audience without sacrificing the spirit of the original.

I. Franko's translation theory was a natural continuation and refinement of the best traditions of his predecessors and contemporaries. For the first time in Ukrainian history, I. Franko systematically developed the fundamental problems of literary translation and created a coherent theoretical framework. His extensive translation practice, critical reviews, and editorial work provided a rich foundation for his theoretical insights, making him a pioneering figure in Ukrainian translation studies.

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*Секція 3. Зарубіжна література і порівняльне літературознавство*

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# АУТОФІКЦІЯ ЯК ЛІТЕРАТУРНИЙ ФЕНОМЕН: СТИЛІСТИЧНІ ОСОБЛИВОСТІ ТА ПОРІВНЯЛЬНИЙ АНАЛІЗ СУЧАСНИХ ПРИКЛАДІВ

**Вступ.** Аутофікція – жанр сучасної літератури, який поєднує автобіографічні елементи з художнім вимислом. Термін був вперше використаний Сержем Дубровським у 1977 році. Жанр аутофікції став відповіддю на обмеження традиційної автобіографії, відкривши авторам можливість поєднувати правду і вигадку. Автор стає водночас і суб'єктом, і об'єктом письма, експериментуючи з ідентичністю та стилістикою викладу.

**Теоретичні аспекти аутофікції.** Теоретичне осмислення аутофікції вимагає розгляду жанру як явища, що знаходиться на межі між правдою та вигадкою. Аутофікція не є повністю достовірною автобіографією, однак і не повністю художнім вимислом. У центрі тексту завжди стоїть «я», проте його образ часто є фікційним, сконструйованим для досягнення естетичних або емоційних ефектів.

На думку В. Колонни, аутофікція – це простір, де автор може вільно інтерпретувати своє життя, не дотримуючись суворої фактичності. Аутофікція базується на грі між іменем автора, персонажем і оповідачем, які можуть співпадати або різнитися. Це дозволяє зосередитися на внутрішньому досвіді, психоемоційному стані, а також соціальному контексті. Автори-аутофікціоналісти часто звертаються до травматичних подій, використовуючи письмову форму як засіб катарсису.

Крім того, аутофікційний текст зазвичай має фрагментарну композицію, нелінійний сюжет, інтертекстуальність, а також високий рівень саморефлексії. Часто він включає метаопис і звернення до читача, що руйнує ілюзію художньої

«об'єктивності». Такі характеристики роблять аутофікцію складним, але надзвичайно багатогранним літературним явищем.

**Порівняльний аналіз сучасних творів аутофікції.** В нашому дослідженні ми розглянемо три ключові приклади аутофікції.

Клер-Луїз Беннетт у романі «Checkout 19» досліджує особисту еволюцію героїні через призму літератури. Текст насичений рефлексіями, думками про книги, які вона читає, і як вони впливають на її життя. Структура роману не має чіткої сюжетної лінії, натомість побудована на внутрішньому монолозі, що чергується з епізодичними сценами з життя. Такий стиль створює атмосферу інтимної сповіді.

Едуар Луї у «The End of Eddy» змальовує реалії свого дитинства в робітничому містечку, підкреслюючи конфлікти ідентичності. Автор не просто переповідає факти, а вдається до художнього відтворення атмосфери та психоемоційного фону, використовуючи літературні прийоми, характерні для аутофікції – дистанціювання, іронію, змішування документальності та вигадки.

Юко Цушіма у «Territory of Light» розкриває досвід жінки, яка намагається подолати особисту кризу після розлучення. Її роман – це поетичний щоденник, у якому кожен розділ відображає новий місяць життя героїні. Стилістично твір тяжіє до ліричної прози, де важливу роль відіграє образність і атмосфера. Хоча сюжет частково вигаданий, основа роману – це власний досвід авторки, що дозволяє класифікувати його як аутофікцію.

Усі три твори демонструють різні національні підходи до жанру: англосаксонський інтелектуалізм Беннетт, французька соціальна критика Луї та японський психологізм Цушіми. Це підкреслює універсальність аутофікції як жанру, що адаптується до культурного контексту.

**Висновки.** Отже, аутофікція є потужним інструментом художнього самовираження. Вона дозволяє авторам поєднувати правду і вигадку, створюючи глибоко особисті, але водночас універсальні твори. Жанр аутофікції актуалізує питання ідентичності, травми, пам'яті, а також літературної правди. Аналіз сучасних творів засвідчує, що аутофікція стала не лише модним напрямом, а

справжнім культурним феноменом.

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**Секція 4.** English for Specific Purposes: освітні перспективи Євроінтеграції

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## ENGLISH AS A TOOL FOR EUROPEAN INTEGRATION

In the context of European integration, the importance of English for Specific Purposes (ESP) is becoming increasingly evident. As international cooperation in fields such as science, technology, and economics expands, proficiency in specialized English emerges as a key competence for professionals and students alike.

ESP is not merely about language learning – it is a tool that equips learners with communicative skills tailored to real-life professional scenarios. This linguistic training reflects the demands of globalized industries and academic exchanges. In Ukrainian higher education, integrating ESP into curricula helps students prepare for participation in international projects and enhances their ability to navigate multilingual environments [1, p. 15].

Moreover, ESP instruction bridges the gap between general language education and the specific terminological demands of various professions. For instance, engineering students learn to describe technical processes, while medical students focus on clinical terminology. This practical focus not only improves linguistic accuracy but also builds confidence in cross-cultural communication.

In light of Ukraine's ongoing efforts to harmonize its educational standards with those of the European Union, ESP becomes a strategic component of academic mobility. Through student exchange programs, joint research, and collaborative projects, students who possess strong ESP skills are better positioned to integrate into international academic and professional communities.

Additionally, universities benefit from emphasizing ESP in their programs by attracting international partnerships and enhancing their global reputation. Many

European institutions evaluate language preparedness as part of their selection criteria, and ESP helps Ukrainian students meet these expectations effectively.

While the benefits of ESP are clear, implementing it across all disciplines still poses challenges. Teachers must have not only strong language proficiency but also an understanding of subject-specific content. Developing such interdisciplinary expertise requires institutional support, access to resources, and targeted professional development.

In conclusion, ESP stands as a vital bridge between language education and the realities of the modern, integrated European environment. It empowers students to apply their language skills meaningfully in diverse contexts, enhances academic and professional mobility, and supports Ukraine's broader goals for European integration [2, p. 34].

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## FEATURES OF SPEECH ON SOCIAL NETWORKS

In today's information society, social networks have become an integral part of the daily lives of millions of people. They serve not only as a means of communication but also as a space for self-expression, sharing opinions, shaping public perception, and disseminating information.

Nowadays, social networks are seen as an important tool for shaping public

discourse, where every user has the opportunity to express their position, influence social perceptions, and voice support or criticism of certain phenomena.

A social network is an interactive website with numerous users, where the content is generated by the users themselves [1]. Users can create their own content, comment, like, and share information, which contributes to a continuous dynamic of communication. This makes interaction more open, but at the same time more chaotic.

The Internet has introduced new channels of communication and led to the emergence of new forms of interaction. Personal data of social media users (such as photos, biographical information, and preferences) become the basis for interpreting their communicative acts [2]. This significantly changes the very nature of speech: it becomes not only a tool for conveying meaning but also a means of constructing a digital identity.

In this context, the phenomenon of netiquette emerges – a set of rules and norms for behavior in online environments. A new speech culture is being formed, which combines elements of oral, written, and sometimes even visual communication. This requires users to have a high level of communicative flexibility and the ability to adapt to various formats of interaction.

Speech in social networks has a number of distinctive features that set it apart from traditional forms of verbal activity. These include fragmentation, emotionality, use of slang, emojis, abbreviations, and an informal style of expression.

Several types of communication are realized in social networks: interpersonal, intergroup, intersocietal, communication between an individual and a group, between a group and society, and between an individual and society [3].

In the communicative environment of network interaction, there are such forms of speech as monologue, dialogue, and polylogue, which acquire new specific features in the context of online communication [3]. For instance, a polylogue on social media can take place in the form of comments under a post, where each participant expresses their own opinion, not necessarily following a logical sequence in the discussion. This form of communication fosters the development of horizontal communicative links, where there is no clear hierarchy, and each opinion has the potential to be heard

Thus, speech in social networks is a dynamic, multifaceted phenomenon that is constantly evolving alongside the development of digital technologies and social practices. It has its own features that distinguish it from traditional communication and requires separate study within the framework of linguistics, sociology, and communication studies.

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## OPTIMIZING DEVICE ENERGY CONSUMPTION ON STM32 MICROCONTROLLERS

Modern embedded devices are increasingly battery-powered and must use as little energy as possible. For so many autonomous gadgets, an effective power-saving strategy is clearly critical. The popular 32-bit STM32 microcontrollers are widely used

in such devices because they combine good performance with low power consumption.

*Main Methods to Reduce Power Consumption*

*Disable Unused Peripherals.* Turn off MCU peripherals when they are not needed. Many STM32 parts let you control each peripheral clock via the RCC registers. The developer must enable a peripheral only when needed and then disable its clock afterward. Disabling all unused blocks (timers, ADC, communication interfaces, etc.) leads to a noticeable drop in total current.

*Configure GPIO to Prevent Leakage.* Proper setup of general-purpose I/O pins (GPIO) helps avoid leakage currents. Do not leave unused pins as floating inputs – instead, set them to analog mode. In analog mode, the input comparator (Schmitt trigger) and pull-up/pull-down resistors are disabled, which cuts idle leakage greatly. Correct GPIO configuration ensures no extra current flows through unused pins.

*Lower the Clock Frequency.* A CMOS microcontroller's power draw is roughly proportional to its clock frequency. Therefore, it is wise to reduce the system clock to the lowest level that still meets performance needs. This can be done by lowering the main PLL/HSI frequency or switching to a slower clock source (for example, MSI). In many designs, dynamic frequency scaling is used: the MCU runs at a higher clock only during heavy work and then switches to a lower clock or sleeps when idle.

*Use Low-Power Modes (Sleep, Stop, Standby).* STM32 families offer special sleep modes that shut down parts of the system to save energy. Proper use of these modes is a key power-saving method. The main modes are:

1. Sleep: a light sleep where only the CPU clock stops; all peripherals and clock generators keep running.

2. Stop: a deep sleep where the CPU and bus clocks stop, and main oscillators (HSI, HSE, PLL) turn off. Only slow clocks (LSI/LSE) may stay on for timers or RTC. SRAM and registers remain powered, so after waking the system continues where it left off. Stop mode current falls to single- or tens-of-microamps. There can be several Stop levels (Stop0/1/2) of increasing depth (depending on the STM32 series and conditions).

3. Standby: the lowest-power mode, where core and RAM power are almost fully cut. Both internal regulators (main and low-power) turn off, and the core is unpowered.

This pushes current down to nanoampere range. Exiting Standby is the same as a full reset because execution context is lost.

*Selecting the Optimal Operating Mode for the Microcontroller*

When designing a system, choose the mode that best balances power saving and the needed wake-up speed or functionality. Ultra-low-power STM32 series support many sleep options and let you combine them for different tasks. As documentation notes, each deeper mode cuts consumption further but increases wake-up time and reduces which peripherals or wake-up sources are available. For example, if you need to wake often and respond quickly, Stop mode may be better than Standby, trading off a small extra current for faster wake-up and keeping RAM intact.

*Circuit-Level Power-Saving Techniques.* Overall power efficiency depends not just on the MCU but also on board design. First, switch off power to external modules when they are not used. Sensors, radio modules, and memory chips connected to the STM32 may draw more standby current than the MCU itself.

*Lower Supply Voltage and Regulator Choice.* Dynamic power in CMOS is proportional to the square of supply voltage. Reducing VDD therefore gives a big cut in dynamic power. If the rest of the system can handle it, use a lower voltage (for example, 1.8 V instead of 3.3 V). Many STM32 can run at 1.8 V, which lowers both static and dynamic currents significantly. Inside the MCU, you can also choose among different internal core regulator modes to save more energy.

*Example: Periodic Wake-Up Sensor*

Imagine a wireless sensor that measures temperature and humidity every 10 seconds. For the rest of the time, it must draw near-zero current. Here is a common solution using STM32 low-power features:

*Deep Sleep with Periodic Wake-Up.* Most of the time, the MCU stays in Stop or Standby. On a low-cost STM32G0, Stop2 mode can keep RAM and registers alive with only a few microamps of current. The new STM32U0 is even better – its standby current with RTC on is about 160 nA. The MCU wakes via the RTC timer every 10 s, takes a measurement, sends data, then returns to sleep.

*Power Off Sensor and Peripherals.* Before sleeping, the MCU cuts power to the

external sensor and radio via transistor switches. In sleep, only the MCU (in Stop2/Standby) and the RTC draw current. All unused GPIO are set to analog mode or held at a defined level.

*Fast Active-Phase Operation.* On RTC wake-up, the STM32 exits Stop, turns on sensor power, and starts measurement. The sensor (e.g. an I²C temperature sensor) converts readings, which the MCU reads via I²C, then transmits to a base station. To minimize energy, you can either run at a lower clock (so operations use less power but take longer), or use a higher clock ("race-to-sleep") to finish tasks quickly and go back to sleep.

*Sleep-on-Exit.* To simplify code, enable Sleep-on-Exit. After initial setup, the main function calls HAL_PWR_EnterSTOPMode(...) or executes WFI(). When the RTC interrupt fires, the ISR runs the sensor and transmit code. If SLEEPONEXIT was set via HAL_PWR_EnableSleepOnExit(), the MCU automatically returns to sleep as soon as the ISR ends.

*MCU Selection.* For these tasks, pick an MCU with the needed features and low consumption. The STM32G0 series (Cortex-M0+) is cost-effective with low power – Stop1 on STM32G0 can reach about 3.3 µA (CubeMX estimate). Standby currents are in the hundreds of nanoamps. For an even lower draw, ST offers the STM32U0 series (Cortex-M0+), which targets ultra-low-power operation.

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# PRACTICAL ASPECTS OF TRANSLATION OF ENGINEERING DOCUMENTATION IN THE FIELD OF CONSTRUCTION AND CIVIL ENGINEERING

**Introduction.** Modern trends of globalization and market integration require high-quality translation of technical documentation that is used in construction and civil engineering. The increasing number of international projects gives translators the task of ensuring the accurate transfer of specialized information. In this context, analyzing the features of engineering text translation is important, as well as identifying difficulties and creating recommendations for how to overcome them. Incorrect terminology or inaccurate translation can cause serious technical mistakes and financial losses.

**The purpose of our research** is to identify the main problems and offer a method for translating engineering documentation that meets modern requirements of international standards in the field of construction and civil engineering.

**In the course of our research, we will attempt to complete tasks**:

– To analyze the specific terminology in documentation related to construction and civil engineering;

– to identify the difficulties in translating specialized texts;

– to develop recommendations for using specialized translation tools and adapting terminology;

– to assess how international standards influence the translation process;

– to apply modern AI translators to selected texts and evaluate their effectiveness based on expert assessment.

**Main body**

*The complexity of specialized terminology is a challenge for the translator.* Engineering documentation contains many terms that have a narrow professional

meaning. Differences between Ukrainian and English technical vocabulary often cause situations where the translation is unclear. It is necessary to constantly update vocabulary to align with modern standards and practices in construction. Highly qualified professionals must understand terminology, know foreign languages, be able to clearly express their ideas in the target language, and preserve the original meaning. It is also important to mention abbreviations that often remain untranslated. This creates problems in the source text, where abbreviations are not explained or the writer lacks competence [5, p. 367].

Incorrect choice of synonyms in translation of technical documentation can greatly distort the meaning of the text, especially in highly specialized fields such as construction and civil engineering. Technical terms usually have precise meanings that depend on context, and the wrong equivalent can lead to incorrect interpretation of important processes or requirements [6, p. 247-252]. This may cause mistakes in project implementation. Therefore, to ensure accurate translation, it is necessary to consider the specifics of the industry, use verified terminology databases, and consult with experts.

*For example,* translating terms related to geotechnical research requires not only language proficiency but also an understanding of engineering processes to avoid misinterpretation or loss of meaning. Thus, complex terminology makes translation not only a linguistic task but also a real professional challenge requiring a combination of linguistic and engineering knowledge.

*Influence of international standards on the translation process and the use of specialized translation tools as a way to improve accuracy.* International standards in construction (such as ISO and ASTM) [4] set common rules and terminology, which help simplify translation and unify documentation. Modern software tools (CAT systems, glossaries) help standardize terminology translation.

Following these standards helps ensure accurate information transfer, which is essential for international projects where inaccuracies may cause serious technical consequences [1]. Implementing automated solutions reduces the risk of human errors.

The war in Ukraine has caused major infrastructure destruction, and in the future, fast and effective rebuilding will be a very important topic. This may involve

cooperation with engineers from other countries and international partners, making technical communication in English crucial.

Therefore, I believe we need to start thinking now about international standards and new methods for applying them in fields connected to specialized text and technical documentation translation. This topic is very relevant, as it combines innovative technologies, practical translation issues, and important tasks for rebuilding our country.

*Example:* An analysis of a technical description translation for a bridge construction project was conducted.

1) Problem: Several terminology inconsistencies were identified, which could lead to misinterpretation of construction decisions.

2) Use of CAT system: With the help of a glossary and CAT system, the translation was standardized, reducing errors by 25% [8].

3) Result: Recommendations on using specialized translation tools were implemented and proved to be effective in practice.

The analysis of documentation from international companies in the civil engineering sector shows that following standards significantly improves clarity and accuracy in translation, which is critical when engineers from different countries work together.

*Using AI to improve the accuracy of specialized engineering documentation translation.* Artificial intelligence technologies, including CAT systems and AI translators, help standardize and speed up the translation process for engineering documentation [2]. This topic is very relevant today because it combines innovative technologies, real translation challenges, and the reconstruction of the country.

Thanks to machine learning, AI can generate specialized terminology databases that support translators in working with complex texts. For example, using AI to develop terminology for BIM (Building Information Modeling) helps avoid errors in documentation and ensures better information exchange among international teams [7].

Under the conditions of rebuilding Ukraine’s war-damaged infrastructure, AI can become a very useful tool for assessing the condition of damaged objects, generating automated designs, and selecting optimal solutions. For example, AI systems can

analyze drone data to assess damage to bridges and buildings, which saves time and human effort [3]. We have already seen many cases where AI visualized Ukrainian cities destroyed by war as already rebuilt.

Using AI in technical documentation translation helps reduce language barriers and speeds up project coordination between different countries. This is especially important for large international construction projects involving multinational teams.

Example: An analysis was conducted of an infrastructure rebuilding project in one region of Ukraine, where AI technologies were used to translate key technical documents.

Problem: Major terminology barriers were identified and assessed for their impact on translation accuracy.

Solution: A CAT system with an AI module was used to standardize terminology.

Result: The translation quality improved significantly, supporting seamless cooperation between Ukrainian and international experts.

**Conclusions.** So, we can say that the translation of engineering documentation in the field of construction and civil engineering is a very important and complex task. Translators must not only understand specialized terminology but also follow international standards carefully. Modern technologies such as CAT tools and AI significantly improve translation quality, help standardize terminology, and optimize work processes. In the context of Ukraine's post-war infrastructure rebuilding, high-quality English translation of technical documentation becomes a key factor in successful cooperation with international partners, involvement of foreign engineers, and implementation of complex international projects. Thus, the development of innovative approaches to specialized text translation plays an important role in the country's recovery and integration into the global market.

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**SOFT SKILLS IN IT: THE ROLE OF ENGLISH IN COMMUNICATION IN**

## INTERNATIONAL COMPANIES

The modern world dictates its own rules to us. To be a high-class professional, it is no longer enough to have a specialized education and even work experience in your field. More than 50% of companies consider soft skills to be one of the main criteria when recruiting employees.

There are two categories of skills that characterize a specialist: soft and hard skills. Hard skills are technical skills directly related to professional qualifications. For IT specialists, these are programming languages, data transfer protocols, network construction principles, security standards, virtualization systems, risk management, knowledge of analysis systems, etc. These skills are acquired during training, workshops and certifications. Hard skills are technical knowledge and skills that are mandatory for performing the work of a programmer [1, p. 239-242].

Soft skills are personal qualities that are not directly related to specialization, but they are closely associated with hard skills. Soft skills for a developer are the ability to effectively communicate with a team and to find non-standard solutions. In short, soft skills are about interacting with people.

The importance of soft skills for IT specialists. Currently, the IT industry has changed significantly. Developers must not only clearly perform technical tasks; they should constantly learn, because languages, frameworks, and tools change quite often [2].

However, even this is not enough because the development of soft skills is required (communication skills, the ability to find an approach to colleagues and clients). It means that just sitting in a corner will not work: IT specialists are required to be able to work in a team.

The following advantages of possessing soft skills can be highlighted.

1. Helps with employment. It is more profitable for a company to hire a person who can take responsibility, likes to show initiative, manages the process, and is able to communicate with the team and listen to the others.

2. High probability of career growth. Developed soft skills definitely help in the

career ladder, because with each new step there are more and more responsibilities. If you want to grow to Senior, then you should think about developing soft skills. It differs from Junior not only in his experience but also in the ability to make decisions that will be beneficial for the company [2].

Soft skills will be needed in order to:

1. Maintain an individual approach and solve problems in a non-standard way in the conditions of process automation and the implementation of AI.

2. Work productively remotely and communicate with employees from different countries, understanding cultural differences in multinational teams.

3. Constantly learn, maintaining long-term motivation.

4. Adapt and make informed (logical) decisions. This will require responsibility, analytical thinking, and other soft skills.

5. Be in high demand in the labor market and stand out among competitors. About 40% of vacancies will soon require flexible skills.

6. Increase productivity. Soft skills stimulate creativity, contribute to stable work, and reduce stress levels.

7. Improve quality of life, avoid burnout, learn to manage emotions, and understand yourself and others [3].

If we talk about soft skills specifically for IT specialists, we can list the following.

1. Time management. Time management is the ability to set priorities, break big tasks into smaller ones, and plan steps. The skill is equally important for the boss and the executor, the designer and the programmer, the tester and the system administrator, in the office and at remote work.

2. Communication. Negotiation skills, presentations, and the ability to find compromises are all examples of these skills. Communication skills will be useful when interacting with colleagues and exchanging experience and knowledge. If you want to develop, then you can't do without it.

3. The ability to work in a team. Any software product – a website, a mobile application, or a CRM system – is always the result of teamwork between a programmer, a designer, and copywriter. There should always be coordination and

mutual understanding between the participants in the process, which is impossible to achieve without teamwork experience.

4. Creativity and flexibility. This point is about the ability to quickly adapt to new conditions and find non-standard solutions to the situation.

5. Emotional intelligence. This intelligence has two equally important components: the ability to control your emotions and the ability to understand the emotions of other people. Emotional intelligence helps to quickly recognize the dissatisfaction or doubts of the interlocutor, the desires and expectations of other people, and instantly adapt your actions and emotions to the prevailing circumstances.

6. Understanding the value for the client. Soft skills include, firstly, customer orientation. The product is created for people: the customer, users, etc. A good developer should understand what he does, what problem he solves, and what value it brings for the client.

7. Responsibility. People with a developed sense of responsibility are faster to receive interesting projects and advance in their careers.

8. Analytical thinking. It is the ability to collect, analyze, and systematize information, find patterns, draw conclusions, assess risks, make decisions and predict results.

9. Honesty and ethics. This is about the compliance of words and actions with principles; adherence to ethical norms and rules of conduct, sincerity, and responsibility for actions and words [3, 4].

And finally, of course, we cannot fail to mention knowledge of the English language – as one of the main soft skills.

What role does English play among all the listed soft skills? This is one of the most important, fundamental foundations.

Each of the skills listed below requires knowledge of English. If you do not have a sufficient level of English, you will not be able to write program code, talk to the customer, or discuss details with colleagues. You will not be able to be part of a team, and you will never become a leader or advance in your career.

Some may argue that knowing English is a hard skill, but it’s not. This statement

can be considered true, but only in the context of specific documentation, which is the foundation of IT.

In fact, knowing English is a soft skill. Nowadays, it exists on a par with honesty, responsibility, and communication.

You cannot be considered a full-fledged employee or specialist in your profession if you don't speak English. This is especially important when you are working in international companies.

If we analyze the special role that English plays in international business communication, it is worth noting that English has been declared the official language of international and multinational corporations. In English-speaking countries, it is becoming increasingly popular for companies to train employees in the linguistic features of communication with foreign partners in order to increase the efficiency of business contracts.

Below are some reasons why knowledge of English is extremely important for IT specialists:

Standardization in the industry: English is used as a standard for various specifications, protocols, and industry standards.

Employment opportunities: Many international IT companies require their employees to be proficient in English. Job advertisements, interviews, and daily communication in the office are often conducted in English. Strong knowledge of the language improves employment opportunities and career growth.

International Collaboration: English is the primary language of communication in the global IT community. IT projects often involve collaboration between teams located in different countries. English proficiency allows IT professionals to communicate effectively with colleagues, customers, and stakeholders from around the world.

Access to Knowledge: Most technical resources, including documentation, tutorials, forums, and online courses, are available in English. Knowledge of English allows IT specialists to access a wealth of information and keep up with the latest trends and best practices in the industry.

Attending conferences and seminars: IT experts often attend conferences and

seminars to stay up to date with industry trends and innovations. These events are usually held in English, so knowing the language is essential for active participation and networking [3, 4].

English is therefore a key tool for IT specialists. Most technical documentation, software, and communications in international companies are conducted in English. Therefore, knowledge of English is not only an advantage but also a necessity for a successful IT career. After all, English is the language of the global IT industry.

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## ENGLISH FOR PROGRAMMERS: IS IT WORTH LEARNING THE LANGUAGE DEEPER THAN JUST FOR READING DOCUMENTATION?

For a career in IT, an English proficiency level sufficient only for reading and translating official documentation may serve as a basic requirement, but it is not enough for effective professional growth. Let's explore why and what skills need improvement.

1. Reading Technical Documentation. Many IT professionals start by understanding documentation, as most resources, manuals, and articles are written in

English. Official programming language guides, API documentation, and architectural descriptions require at least an intermediate level of English to grasp key concepts. However, understanding technical texts involves more than just translation – it requires knowledge of industry terminology and the ability to interpret complex instructions correctly. Misinterpretation can lead to coding errors, security vulnerabilities, and inefficiencies. Additionally, staying updated with the latest trends in software development requires reading research papers, RFCs (Request for Comments), and industry blogs, which are predominantly in English. Improving this skill involves active reading, maintaining a glossary of technical terms, and practicing comprehension through summaries and discussions [2].

2. Verbal and Written Communication. Even if your primary job is coding, English is necessary for communication with colleagues, clients, and employers. In most international companies, English is used for emails, meetings, code reviews, chat discussions, and code comments. Miscommunication in any of these contexts can cause misunderstandings, project delays, or even conflicts. For example, providing clear bug reports, writing structured documentation, and articulating development challenges require precise language skills. Additionally, participating in daily stand-ups, sprint planning, and retrospectives in Agile teams often requires speaking English fluently. To improve, IT professionals can practice writing technical reports, take part in online forums, and join English-speaking communities like tech meetups or open-source projects.

3. Participation in Professional Communities and Conferences. A large part of the IT community, including Stack Overflow, GitHub, Hacker News, and Reddit, operates in English. Without the ability to actively participate in discussions and ask questions, staying up to date with new trends is challenging. Additionally, attending international conferences such as Google I/O, WWDC, or AWS Summit often requires listening to presentations in English. Many networking opportunities arise at such events, where professionals exchange ideas, seek collaborations, and learn from industry leaders. Reading and understanding conference papers, watching keynote speeches, and asking insightful questions in Q&A sessions require both listening and speaking skills.

Improving these skills can be done by watching tech talks with subtitles, participating in online hackathons, and engaging in open-source discussions [1].

4. Job Interviews and Employment. Most job openings in large IT companies require at least a minimal level of spoken English, as interviews often involve conversations with recruiters or technical specialists from other countries. Even if the role does not involve client interactions, the ability to explain technical solutions and experience in English is a significant advantage. Many companies conduct technical interviews in multiple rounds, including algorithmic problem-solving, system design discussions, and behavioral interviews – all in English. Struggling with communication during these interviews can reduce the chances of being hired, even if technical expertise is strong. To prepare, candidates should practice common interview questions, conduct mock interviews with peers, and refine their ability to describe past projects clearly [3].

5. Career Growth. At entry-level positions, understanding documentation may be sufficient. However, advancing to Senior, Team Lead, or Architect roles requires effective team interaction, presenting ideas and proposals, and writing quality technical documentation. Leadership roles often involve mentoring junior developers, participating in cross-functional meetings, and advocating for best practices – all of which demand strong English communication skills. Additionally, career growth often involves publishing blog posts, giving conference talks, or contributing to whitepapers, which require clear and concise writing. To enhance this skill set, professionals can start by contributing to documentation in open-source projects, writing technical articles, and attending public speaking courses [3].

Conclusion. An English proficiency level sufficient only for reading documentation can help at the start of an IT career, but it is not enough for long-term success. To work effectively, grow professionally, and access opportunities in international companies, it is necessary to develop both verbal and written communication skills. Therefore, learning English should be a priority, including practicing speaking skills, watching technical talks in English, and participating in professional discussions. Developing fluency in English will not only improve job

prospects but also open doors to broader networking, knowledge-sharing, and leadership opportunities in the IT field.

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## PROFESSIONAL ENGLISH TERMINOLOGY IN THE BANKING SECTOR IN THE CONTEXT OF EUROPEAN INTEGRATION OF UKRAINE

The European integration processes that have been actively taking place in Ukraine in recent years require significant transformations in many spheres of public life, among which the banking sector occupies a special place as one of the key mechanisms of economic integration. The linguistic adaptation of the banking system of Ukraine to international, in particular European, standards, is an integral part of European integration and is of strategic importance for the effective implementation of European norms and practices in the domestic financial system. Particular importance is gained by mastering professional English terminology, which provides effective communication in the international banking space and creates preconditions for the unimpeded integration of Ukrainian banking institutions into the European financial

ecosystem [1].

English today is a recognized lingua franca of the international banking sector, a universal language of communication between financial institutions around the world. In the context of globalization and European integration of Ukraine, knowledge of professional English terminology becomes a prerequisite for the successful activities of banking institutions and their employees, providing them with competitive advantages in the international financial services market. The importance of mastering professional English by specialists of the banking sector is determined by a number of objective factors: Intensive expansion of international banking cooperation, which requires standardization of terminology; significant growth in the number and volume of international banking operations with the participation of Ukrainian banks; the urgent need to harmonize the banking legislation of Ukraine with the EU norms; gradual implementation of International Financial Reporting Standards (IFRS); expansion of the sphere of activity of Ukrainian banks in international capital markets.

Modern research shows that English-language banking terminology is constantly evolving and enriched with new terms, especially in areas related to innovative financial technologies and products [2]. Accordingly, there is a need for a systematic updating of theoretical and practical approaches to the study, adaptation, and use of this terminology in the Ukrainian banking sector. Specialized English language courses for bank employees should focus not only on general banking vocabulary but also on terminology that reflects current trends in the development of the European banking sector, including the latest financial instruments, regulatory requirements, and technological innovations.

A thorough analysis of the current state of English-language banking terminology in Ukraine reveals a number of systemic problems that require a comprehensive solution. First of all, there is a significant inconsistency of translations of English banking terms in Ukrainian, which creates a terminological confusion and complicates professional communication. Various banking institutions, regulators, and educational institutions often use different translations of the same English terms, which leads to ambiguity of interpretation of important financial concepts and instruments. In

addition, there is a problem of the presence of terminological lacunae in the translation of specific European banking concepts, for which the Ukrainian language has not yet formed established equivalents [3]. This situation is particularly characteristic of innovative banking products and regulatory mechanisms introduced in the EU in recent years.

There is also a tendency to actively borrow and create a tracing paper from the English language without appropriate adaptation and contextualization in the Ukrainian language environment. Although borrowing is a natural process of enriching the language, excessive and unsystematic use of Anglicisms without taking into account the peculiarities of the Ukrainian language can lead to blurring of the terminological system and complication of communication processes [4]. Another significant problem is the lack of uniform terminology standards in the banking sector, which causes terminological differentiation and inconsistency in the use of professional vocabulary.

The study found that the most problematic terminology groups in the context of European integration processes in the banking sector are the terms associated with new banking products and services (contactless payment, peer-to-peer lending, neobanking, buy-now-pay-later services, open banking, and the digital wallet;) terms of regulatory nature originating from European banking legislation (SEPA, PSD2, KYC, AML, and GDPR compliance in banking, MiFID II); terminology in the field of financial technology and digital transformation of the banking sector (blockchain, tokenization, smart contracts, API banking, digital onboarding, and biometric authentication). A separate group consists of terms related to the environmental, social, and managerial aspects of banking (ESG banking, green finance, sustainable investment, and socially responsible banking), which are becoming increasingly important in the European financial context.

The analysis of the practice of using English-language banking terminology by Ukrainian financial institutions demonstrates significant differences in the level of terminological competence of employees of different units. Employees of international departments and units directly interacting with foreign partners usually have a higher level of proficiency in professional English terminology. Instead, employees focused

mainly on the domestic market often face difficulties in interpreting international banking documents and communicating with foreign colleagues. This situation creates communication barriers and can negatively affect the effectiveness of integration processes [5].

Particular attention should be paid to the terminology related to European payment systems and mechanisms, in particular, such as the Single Euro Payments Area (SEPA), TARGET2, and STEP2, which are an integral part of the European financial infrastructure and to which Ukraine seeks to join in the process of European integration. Unification of Ukrainian terminology in this area with European standards is critical for successful integration into the single EU payment space.

To successfully integrate Ukraine into the European banking space, it is necessary to develop and approve a single terminological glossary of banking terms in English and Ukrainian, which would cover all key areas of banking activity and reflect the specifics of European banking legislation and practice. Such a glossary should be developed with the participation of leading experts in the field of banking, linguists, terminology specialists, and representatives of regulatory authorities, which will ensure its complexity and practical value.

A significant step should be the introduction of standardized banking terminology that meets EU standards and is harmonized with the European terminology system. This requires systematic work on the analysis of European banking documents, directives, regulations, and technical standards in order to identify key terms and concepts and their correct reflection in the Ukrainian language [5]. Of particular importance is the conduct of terminological examination in the translation of European regulations in the field of banking regulation, which will avoid ambiguous interpretations and ensure the accuracy of the transfer of content.

It is also necessary to improve the system of language training of banking specialists, taking into account European integration processes. In particular, it is advisable to include in the curricula of economic and financial specialties specialized courses in banking English, which would take into account the peculiarities of European banking terminology and practice. It is also important to organize a system of advanced

training for employees of the banking sector, aimed at improving their skills in professional English in the context of European integration.

Development of teaching materials on banking English, oriented to European standards, is another important area of work. Such materials should include not only theoretical aspects of banking terminology but also practical cases, situational tasks, and simulations that reflect real communicative situations in the European banking environment. The use of authentic banking documents and materials of European financial institutions in the educational process will contribute to the formation of practical skills in working with English-language banking documentation [6].

An important area of activity is also the creation of online platforms for the constant updating of banking terminology, which will ensure prompt response to terminological innovations and changes in the European banking environment. Such platforms can function as open collaborative projects, which will involve practitioners, scientists, teachers, and students, which will ensure their relevance and practical orientation. The integration of such platforms with European terminology databases will contribute to the harmonization of Ukrainian and European banking terminology.

Particular attention should be paid to the development of terminology standards in the field of financial technologies and digital banking, since these areas are the most dynamic and innovative in the modern banking sector. Standardization of terminology in this area will avoid terminological confusion and ensure effective communication between all participants of the financial market, including traditional banks, fintech companies, regulators, and users of financial services [6].

Equally important is the issue of terminological training of English teachers for economic and financial specialties. Regular training programs, internships in European financial institutions, and participation in international professional forums will allow teachers to update their knowledge and keep abreast of the latest trends in the development of banking terminology.

Professional English terminology in the banking sector plays a key role in the process of Ukraine’s European integration, ensuring effective communication and information exchange between Ukrainian and European financial institutions.

Standardization and harmonization of banking terminology in accordance with European standards will facilitate the acceleration of integration processes, facilitate the adaptation of Ukrainian banks to European standards and requirements, and increase their competitiveness in the international market of financial services.

A systematic approach to the development and implementation of English-language banking terminology, taking into account the peculiarities of European integration processes, will ensure not only the linguistic but also the conceptual harmonization of Ukrainian and European banking systems and will facilitate the introduction of European norms, standards, and best practices in the domestic banking system. This, in turn, will increase the efficiency and transparency of the activities of Ukrainian banks, promote their integration into the European financial space, and, ultimately, positively affect the development of the Ukrainian economy as a whole.

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## DIGITAL TRANSFORMATION OF UNIVERSITY MARKETING: CHALLENGES, TOOLS, AND OPPORTUNITIES

In today's world of globalization, digitalization, and intense competition, higher education institutions are facing increasing pressure to transform how they communicate and promote themselves. A solid and well-thought-out digital marketing strategy can make all the difference – it helps universities attract future students, build a strong public image, and engage with partners and investors. Digitalization opens up powerful opportunities for personalization, data analytics, and automation, shifting the focus from traditional marketing to smart, audience-focused approaches [1].

Most Ukrainian universities, however, still struggle with fully embracing digital tools. Their marketing often remains fragmented, lacking a unified strategy, digital presence, or even basic consistency in visual branding and messaging. That's why analyzing and rethinking digital marketing strategies is so relevant right now.

This research focuses on the case of Volodymyr Dahl East Ukrainian National University, one of the leading institutions in Ukraine. The object of the study is

university marketing activities, while the subject includes digital communication tools, branding, and personalization in the context of digital transformation. The goal of the paper is to provide both theoretical insights and practical recommendations to improve university marketing using modern digital tools. To achieve this, various methods were used: theoretical research, comparative analysis, visual data representation, SWOT analysis, expert reviews, and statistical processing [2].

University marketing today goes far beyond simply promoting academic programs. It involves understanding what future students really want, finding the right positioning in a crowded education market, building trust through strategic communications, and developing long-term partnerships. What makes university marketing unique is its complexity: long decision-making cycles, emotional factors, and the enormous importance of reputation.

The current socio-economic crisis, war in Ukraine, demographic shifts, and technological changes only emphasize the need for universities to shift their approach. Marketing becomes the university's voice – connecting with audiences, shaping perception, building loyalty, and even helping retain current students. In this new reality, digital platforms are not just tools – they are the environment in which universities operate [3].

The experience of foreign universities, like the University of Leeds, shows how digital marketing can drive admissions. Through multichannel campaigns, personalized emails, virtual tours, and social media engagement, they manage to connect with prospective students on a deeper level. In Ukraine, institutions like the Ukrainian Catholic University (UCU), Kyiv Polytechnic Institute (KPI), and Lviv University (LNU) are moving in this direction by running online events, active Instagram and TikTok pages, and faculty video blogs. Still, most institutions face challenges such as lack of funding, limited staff training, and underdeveloped digital ecosystems.

Our analysis of the official pages of Volodymyr Dahl University revealed low engagement, inconsistent posting, and unclear branding – highlighting the urgent need for a new communication approach [4].

Despite the war and forced relocation, the university has shown resilience. It

quickly adapted by switching to blended learning, strengthening its digital infrastructure, and even opening a new center in Kyiv. With a mobile-friendly website, social media activity, and targeted campaigns, the university is taking steps in the right direction. Still, there's plenty of room for growth.

One of the biggest advantages of digital marketing is its measurability. Thanks to web analytics and CRM systems, universities can track how users interact with their content, which channels work best, and what actions lead to applications. Artificial intelligence can take this even further by helping segment audiences, predict behavior, and personalize recommendations. For example, chatbot assistants built on NLP models can reply to prospective students instantly – saving time and improving the user experience.

But marketing isn’t only about being online – it’s about being relatable and trustworthy. Reputation plays a major role, and it’s built not only through academic success but also through online visibility, media presence, and participation in rankings. That’s why involving students as content creators or digital ambassadors can be a game-changer. When students share real stories, give campus tours, or simply post about their university life, they help create authentic, engaging communication that no ad can match [4].

Digital marketing also requires internal transformation. It’s not enough to hire a social media manager. Universities need to build a digital culture – create a brand book, align their tone of voice across departments, train staff, and set up cross-functional teams. This transformation must be systemic, not just a one-time effort. Only then can a university truly stand out and build long-term relevance.

Digitalization is reshaping every aspect of education, from learning formats to administration and marketing. Today’s students – digital natives – expect clarity, simplicity, and interactive content. They want answers fast, ideally in a few clicks. If they can’t find basic info about admissions or open days easily, they might move on. That’s why accessibility, design, and clear messaging matter more than ever.

Storytelling is also a huge part of the equation. A short video of a student explaining why they chose their major often says more than a full brochure. Showcasing

dorms, cafeterias, student life, and real experiences creates emotional connection and trust.

Digital marketing is also about empathy. It's about making a student from another region feel like they belong, helping a worried parent find answers quickly, or making sure an international applicant can browse the English version of your website with ease. That's what digitalization is really about – care.

To sum it up: marketing in higher education today is about building a smart, human-centered ecosystem. It's about showing – not telling – why your university is the right choice. And in the context of Ukraine's ongoing transformation, this kind of forward-thinking strategy isn't just important – it's essential.

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## STRATEGIES FOR TRANSLATING USER INTERFACES IN INDUSTRIAL

# EQUIPMENT

Translating user interfaces (UIs) in industrial equipment is a critical and multifaceted task that demands linguistic precision, technical accuracy, and user-focused design. In an increasingly globalized world, industrial manufacturers must ensure that UI components – such as menus, warning messages, control buttons, and error alerts – are accessible and understandable to operators across various languages and cultures. Mistakes in translation may lead to operational failures, user confusion, and even safety risks.

This paper explores the major strategies used to translate UIs in industrial settings. One of the most prominent challenges is space limitation. UI elements, particularly on small screens or handheld control panels, often require translations to be concise yet accurate. Overly long phrases may not fit the interface and could disrupt the layout or lead to truncation, while overly short ones may lack necessary context or specificity.

Another key issue is the management of technical terminology. Terms must be consistent and reflect both the manufacturer's standards and the expectations of the end user. To address this, terminology databases and translation memory tools are widely used. These resources help translators maintain consistency across software versions and documentation updates.

A further strategy involves close cooperation with engineers, designers, and product developers. Translators must understand the function of each UI element and its relevance to the user. Direct communication with technical teams can clarify ambiguities and ensure that translated terms align with real-world usage [1, p. 10].

In many cases, localization rather than direct translation is necessary. This includes adapting measurement units, adjusting the structure of messages for clarity, and even replacing icons or visual elements that may carry unintended meanings in the target culture [3, p. 33]. For example, a red warning symbol may be interpreted differently in Eastern and Western cultures, and phrasing like «Press to Abort» may require culturally sensitive wording to avoid panic.

Usability testing also plays a significant role in ensuring translation quality. Native-speaking end users can identify unclear or misleading terms during the testing phase, allowing teams to revise the UI before full deployment. This testing not only improves accuracy but also enhances the overall user experience.

Finally, the rise of CAT (Computer-Assisted Translation) tools has transformed UI translation practices. These tools allow for the reuse of previously translated segments, reduce costs, and ensure linguistic consistency. However, human intervention remains essential, especially when dealing with ambiguous, context-sensitive, or safety-critical text [2, p. 18].

In conclusion, UI translation in the field of industrial equipment is not merely about transferring words between languages – it is a process that involves collaboration, cultural adaptation, and technical insight. By applying strategies such as terminology management, localization, usability testing, and tool-assisted translation, translators can produce effective, user-friendly interfaces that enhance both safety and functionality in a global marketplace [1, p. 15].

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## DEPENDENCE OF IT SPHERE POSITIONS ON THE LEVEL OF ENGLISH PROFICIENCY

English knowledge plays an important role in the career development and salary potential of Ukrainian IT specialists, especially from mid-level and above. Data shows that developers with good English skills earn an average of $1,000 to $2,000 more per month than those with poor language skills. Most Ukrainian developers consider their English skills to be average (36%) or above average (43%). A gradual change has occurred in the past six months, with more and more specialists moving from the lower-middle level to the upper-middle level – now accounting for 43% (previously 41%).

Those who are fluent in English remain a small but stable group, accounting for about 9% of the workforce. English proficiency also tends to correlate with seniority level: almost half of junior and trainee developers (46%) say their level is «intermediate», while 42% of mid-level developers say so. Senior developers generally show a higher level of language proficiency, with 55% rating themselves as above average. This trend is most pronounced among architects and technical managers, of whom about 80% rate their English proficiency as «upper-intermediate» or «advanced». This emphasizes the importance of good language skills for advancement into senior technical positions [1].

Djinni, an anonymous job search platform for well-known IT experts, conducted a small study on the relationship between English skills and salary. The study, based on 2020 recruitment data, shows that language skills can significantly affect salary, but only above a certain threshold. In particular, intermediate (B1) seems to be the most effective minimum level: developers below this level (i. e. basic or A1-A2 level) do not receive a significant salary advantage and earn basically the same as those without English skills. There is a significant jump in salary from intermediate to advanced (B2), but surprisingly, there is no significant difference between this and advanced (C1-C2).

The study identified three main factors that affect IT salaries:

1. Professional qualifications – training and work experience;

2. Technical expertise – knowledge of programming languages;

3. English proficiency – the focus of this study.

The size of the company also plays a role: if a talented developer hits the salary ceiling of a small company, he or she may earn below market rate. The study focuses

specifically on English skills and provides salary comparisons for common IT positions. It clearly shows how fluent English can increase income. The first number in each range reflects the salary of someone with limited English proficiency, and the second number reflects the salary of someone with fluent English proficiency:

1. QA (Quality Assurance): $500-2600 → $800-4200
2. Software Developer: $500-$5000 → $650-6600
3. Data Scientist: $800-2500 → $1300-4200
4. Analytics Specialist: $800-1700 → $1200-2800

This breakdown shows that even experienced professionals can lose hundreds or thousands of dollars due to a lack of English proficiency. IT professionals in particular are becoming increasingly aware of this gap: the share of applicants with upper-intermediate or advanced (B2-C1) skills has increased by 12% over the past five years, in part due to the growing number of international language certificates. This trend reflects a global mindset: someone who learned English in Kyiv, for example, can now confidently apply for a job in Boston or other tech hubs around the world [2].

Possessing robust English language abilities opens doors to international career prospects, alongside facilitating high-quality job acquisition when seeking employment overseas. This is particularly significant in the present circumstances for Ukrainian nationals, with many currently considering either short-term resettlement or permanent emigration, including pursuing options such as permanent residence. To illustrate, a Data Scientist in Ukraine with proficient English may typically command a salary of approximately $3000–3500 each month (excluding positions involving management), whereas a similarly experienced specialist in the United States would receive roughly $11,500 monthly on average. This striking disparity emphasizes how global reach greatly increases the potential for financial gains. Employers often specify the level of English proficiency expected from candidates, typically categorized as follows:

1. Beginner – Corresponding to A1-A2 levels in the CEFR, often labeled as Beginner or Elementary.

2. Intermediate – Covers A2-B1, including Pre-Intermediate and Intermediate classifications.

3. Above-intermediate – Typically B2, also referred to as Upper-Intermediate.

4. Advanced – Equivalent to C1 level, generally labeled as Advanced.

5. Fluent – The highest level, C2 or Proficiency.

Out of the available proficiency levels, Intermediate and Upper-Intermediate are particularly attractive to employers. They typically represent the baseline for successful interaction in globally focused work. Conversely, a Beginner skill level provides few benefits professionally and is generally inadequate for positions necessitating international teamwork [3].

Across various industries, English is still the foremost foreign language required by employers. The sectors with the most English-language positions are:

1. IT professionals
2. Marketing
3. Publishing and Media
4. Management

These four domains comprise about half of all jobs specifying a need for English fluency. Other sectors where English is also needed, but to a smaller degree, such as Sales & Purchasing and also Administration & Middle Management, individually account for approximately 7% of the total job openings mentioning English language capabilities.

The demand for English language skills in job postings reveals several significant trends, particularly when considering which job categories prioritize these abilities. These insights underscore the relationship between varying English proficiency levels and specific industries as well as particular job functions:

1. Entry-level English proficiency is predominantly sought after in the Retail industry. A substantial 39% of retail job openings specifying English language skills stipulate that only a fundamental grasp of the language is necessary. This suggests the need for basic communication is present but does not usually involve complicated exchanges or extensive language use [4].

2. Intermediate English competency proves highly significant in roles centered on practical work or direct customer service. The requirement for intermediate English

is prevalent in sectors like:

Working specialties and production – 55%

Construction and architecture – 55%

Design and creative fields – 53%

Service sector – 52%

In these sectors, language proficiency is crucial for everyday conversations, teamwork, and occasionally, understanding various documents; however, superior fluency levels are generally unnecessary for day-to-day functions.

3. Upper-intermediate English proficiency proves crucial within specialized, strategic sectors. Roles demanding collaboration and executive capabilities exhibit this need:

Senior and executive management – 41%

Telecommunications and communications – 41%

Logistics, warehousing, and international trade – 41%

Professionals in these areas routinely lead diverse teams, engage international counterparts, or meticulously manage complex paperwork, demanding robust language capabilities.

4. Advanced and fluent English skills are paramount in industries centered around language proficiency itself. The greatest demand for such abilities is present in Education and Science, specifically targeting:

English instructors and educators – 30%

Professional translators and linguists – 15%

Here, near-native command of English is indispensable, as the language is the primary function.

Ultimately, this reveals the industry-specific prioritization of English fluency. Tailoring language study to career aspirations can dramatically boost employment opportunities, whether your ambition lies in global leadership or a role involving practical, technical tasks.

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## ENGLISH FOR IT SPECIALTIES: WHY IT IS A MUST-HAVE

In today's digital era, the information technology (IT) industry plays a crucial role in shaping the global economy and innovation. With the rapid development of technologies and the increasing disconnectedness of the world, English has emerged as the universal language of communication, particularly in the IT sector. For both students and professionals, mastering English is no longer an option – it is a must-have skill.

One of the main reasons why English is essential for IT specialists is its dominance in technical documentation. Most programming languages, tools, and frameworks are developed in English, and their official documentation is primarily written in this language. Whether it is learning a new programming language, reading API documentation, or understanding error messages, IT professionals are constantly interacting with English content. Although some translated materials exist, they often lack accuracy or are not updated regularly, making English proficiency a clear advantage [1, 4].

Furthermore, English opens the door to vast learning resources. From online courses on platforms like Coursera, edX, and Udemy to educational YouTube channels and global coding forums such as Stack Overflow and GitHub, the majority of content is available in English. IT students who possess strong English skills have better access to high-quality educational materials, allowing them to learn independently and stay updated with the latest trends and technologies.

Communication in English is also essential for collaboration in multinational teams. In many global IT companies, employees from different countries work together, and English serves as the primary language for meetings, emails, presentations, and documentation. For students aiming to join such companies or work as freelancers on international platforms, fluency in English significantly enhances employability and career opportunities. Professionals often need to clarify tasks, present ideas, or participate in discussions – all of which require effective English communication skills [1].

Moreover, English is important for participating in the international tech community. Conferences, webinars, online meetups, and tech blogs are predominantly conducted or published in English. Being able to understand and contribute to these events not only increases visibility but also allows IT specialists to exchange knowledge and build networks with experts from around the world [2].

Another key aspect is that English enables access to innovation and research. Scientific publications, technical research papers, and cutting-edge studies in artificial intelligence, cybersecurity, data science, and other IT fields are mostly published in English. Therefore, the ability to read and understand such texts is crucial for academic and professional development.

Although it is possible to start programming with limited English knowledge, real growth and advancement in the IT sector depend heavily on language proficiency. According to research, students with higher digital literacy and English skills are more autonomous in their learning, more motivated, and more confident in their academic and professional environments [3].

In conclusion, English is more than just a language for IT specialists – it is a fundamental tool for learning, working, and innovating in the global digital world. Educational institutions must ensure that future IT professionals are equipped with the necessary English language skills to thrive in their careers. The ability to understand, communicate, and collaborate in English is not simply beneficial – it is indispensable.

To further highlight the importance of English, consider the role it plays in the process of problem-solving and debugging. When developers encounter a bug or an error, they often search for solutions online. Most of the reliable resources, including documentation, community discussions, tutorials, and Q&A platforms, are in English. Without sufficient language skills, understanding these resources becomes challenging, leading to slower progress and potential frustration [2].

Additionally, English is the language of innovation and cutting-edge research in IT. Prestigious academic journals, international research conferences such as IEEE, ACM, and SIGCHI, and breakthrough articles in fields like machine learning, blockchain, or quantum computing are all presented in English. For students pursuing academic careers or planning to publish their own work, English proficiency is an absolute necessity [2, 4].

Soft skills, particularly communication skills, are increasingly valued in the IT job market. Being able to articulate ideas clearly, negotiate with clients, present projects to stakeholders, and contribute meaningfully to team discussions is vital. All of these require a confident command of the English language. In remote work environments and distributed teams, English often serves as the only bridge between coworkers.

From a career perspective, IT professionals with strong English skills often earn higher salaries and have access to better job opportunities. They can apply for remote roles with foreign companies, freelance on international platforms like Upwork or Toptal, and even relocate abroad. Furthermore, global certifications such as CompTIA, Cisco, Microsoft, and AWS are all conducted in English.

In educational contexts, integrating English learning with IT subjects helps students not only improve their language skills but also gain familiarity with professional terminology. This dual-focused approach makes them more adaptable and

better prepared for real-world tasks. Many universities and colleges are now offering ESP (English for Specific Purposes) courses tailored for IT, which align language learning with technical education [1, 2].

Ultimately, English empowers IT professionals to become global citizens in a highly competitive digital world. It fosters inclusivity, continuous learning, and global mobility. Investing time and effort in learning English yields long-term benefits, both professionally and personally. It is not just about knowing the language; it's about unlocking opportunities and staying relevant in a fast-changing industry [1, 3].

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## ENGLISH FOR SPECIFIC PURPOSES (ESP) FOR CIVIL ENGINEERS: LANGUAGE TRAINING FOR CROSS-BORDER INFRASTRUCTURE

# PROJECTS IN EUROPE

The role of English for Specific Purposes (ESP) in the modern educational process is growing rapidly, especially in the context of European integration. For civil engineers involved in international infrastructure initiatives, ESP proficiency is key to establishing effective communication and interaction with international teams. The demand for engineers with a high level of English language proficiency is growing due to the increasing number of pan-European infrastructure projects that require communication across national borders. Whether it is transportation, energy, or urban development, these projects often bring together specialists from different linguistic and cultural contexts, making English the primary language for technical, legal, and diplomatic communications. In the context of European integration, the development of ESP programs that take into account the needs of civil engineers can overcome language barriers, allowing professionals to effectively participate in international cooperation, share knowledge, and promote the implementation of EU standards. This study examines the value of ESP for civil engineers in international infrastructure projects in Europe and analyzes how specialized language learning can contribute to successful professional growth in the context of global integration.

In light of the increased cooperation between European countries and the expansion of infrastructure initiatives, there is a growing demand for civil engineers who have not only professional knowledge but also professional English. Participation in projects that span several countries requires effective communication between representatives of different cultures and professional backgrounds. That's why English for Specific Purposes (ESP) is becoming an important tool for civil engineers, as it allows them to understand technical documentation, participate in negotiations, present projects, and work with international standards [1, 2]. The experience of international infrastructure programs, in particular in Scandinavian countries, shows that a key factor in their effective implementation is harmonized language training of participants from different countries, which is provided through ESP programs adapted to the needs of engineers [3]. Such training helps to reduce the risks associated with misinterpretation

of technical information and promotes better coordination between teams at all stages of the project – from design to commissioning.

The development of ESP is especially important in the context of the global labor market, where technical specialists are often forced to work in an environment where English is the working language. For example, studies conducted in China confirm that specialized English language training allows engineers to more effectively overcome language barriers and establish cooperation on construction sites abroad [4]. Similar conclusions are demonstrated by educational projects in which engineering students from different countries develop joint solutions through inter-university partnerships [5]. The growing importance of English as a tool for professional development is also reinforced by the spread of the term «World Englishes», which recognizes the diversity of English variants in the world and the need to adapt curricula to cultural and professional contexts [2]. All this indicates the need to integrate modern ESP courses into the educational training of civil engineers for their successful functioning within the European space.

The participation of civil engineers in international infrastructure projects requires not only professional competence but also the ability to communicate effectively in English in an intercultural environment. With the increasing number of joint European initiatives and projects, engineers are increasingly faced with the need to conduct dialogues with colleagues and partners from different countries. This necessitates the expansion of ESP competencies, as traditional knowledge of English is no longer sufficient for successful work. In order to perform their duties effectively, engineers need to have not only technical terms but also specialized language skills related to the norms and standards governing activities within the European Union [2]. Taking into account linguistic and cultural aspects has become an important component of engineering education [3].

As many European projects require different specialists to work together, one of the main challenges is effective communication and understanding between specialists from different countries with different language backgrounds. This is particularly important for civil engineers working on the design, construction, or operation of

infrastructure, where coordination between multiple teams is key to the success of the project. Problems related to language barriers can lead to errors in work, delays, and even work stoppages. To minimize such risks, engineers need to have the necessary skills to work in international teams and to be familiar with the terminology and language constructs used in scientific, technical, and legal contexts, as well as in international contracts. Therefore, ESP courses for engineers aim not only to develop language skills but also to teach specific communication strategies for working in multicultural and multilingual environments [4].

The growing internationalization of engineering projects in Europe necessitates the consideration of international standards and EU legal requirements in the field of education, in particular in the teaching of English for Specific Purposes (ESP). The ESP program for engineers needs to be adapted to the requirements dictated by international and EU standards to ensure a high level of professionalism in international projects. This requires not only English language proficiency but also an understanding of specific terminology related to EU infrastructure standards, such as safety standards, technical regulations, and sustainability requirements. English, as the main communication tool in international projects, should enable effective interaction between engineers from different countries, as well as between government agencies and private companies [1]. Modern engineering programs must meet the requirements of European integration, offering students knowledge not only of technical English but also of the specifics of legislative and legal aspects related to EU legislation [2].

English has become the main language of international engineering projects, particularly in the infrastructure sector. In the context of European integration, it serves as a key means of communication for the exchange of information between professionals, organizations, and governments of different countries. For civil engineers, this means that they need to have a high level of English to successfully implement cross-border infrastructure initiatives such as road, energy, and water supply projects [1]. Knowledge of terminology that meets international standards and EU requirements is critical to participating in such projects, as it helps ensure that all stages of the work are in line with the requirements of legislation and technical standards

governing intergovernmental cooperation. English is also becoming a tool for engineers to conclude international contracts, advise on legal issues, and discuss the results of projects that span several European countries. In such conditions, ESP training for engineers should be aimed not only at language skills but also at understanding the specifics of professional activities in the European context [2].

English for Specific Purposes (ESP) has become an essential tool for civil engineers involved in international infrastructure projects. Proficiency in ESP allows you to effectively interact with international colleagues, overcome language barriers, and actively participate in the development and implementation of European standards. Adapted ESP programs that take into account the specific needs of civil engineers contribute to the improvement of their professional training, which, in turn, will contribute to the successful implementation of international initiatives and the development of European integration.

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# EUROINTEGRATION AS A STIMULUS FOR THE DEVELOPMENT OF EDUCATIONAL CAPABILITIES OF UKRAINIAN YOUTH

European integration of Ukraine is not only a geopolitical choice but also a strong catalyst for change in various spheres of life, including the world. For Ukrainian youth, who are currently undergoing professional training, European integration processes open up new horizons and opportunities for specialty and professional growth. This is especially relevant for students of the specialty «Fine arts, decorative arts, and restoration», and integration into the European cultural and educational space can qualitatively transform their present day and future career.

One of the key aspects of integrating into European educational possibilities is the harmonization of Ukrainian educational standards with European ones. This involves not only the adaptation of educational plans and programs but also the promotion of new methods of implementation oriented towards the development of critical thinking, creative initiative, and practical skills. For future artists, decorators, and restorers, this means the ability to gain knowledge and competencies that contribute to the European market and the cultural space. Participation in international projects, educational programs, and student exchanges will allow us to discover cutting-edge evidence in the field of cultural heritage preservation, contemporary artistic practices, and innovative technologies in arts and crafts [1].

An important incentive is the expansion of opportunities for academic mobility. Participation in exchange programs such as Erasmus+ opens up opportunities for students to study at leading European universities and local schools. This is not without rich knowledge and cultural awareness but also facilitates the development of international contacts, which can benefit future professional activities. Familiarity with various approaches to the development of artistic disciplines, the study of the European

cultural heritage directly in their contexts, as well as the participation in master classes of leading European craftsmen and restorers – this is all invaluable evidence for the production of highly qualified facilitators.

European integration also stimulates the development of international cooperation between Ukrainian and European institutions of higher education. Numerous research projects, holding international conferences and symposia, and the exchange of instructors and experts – all this contributes to the exchange of knowledge and short practices in the field of artistic education and restoration. For students, this means access to new research, the opportunity to participate in various projects under the supervision of leading scientists, as well as expand their scientific and creative horizons [2].

We especially appreciate the infusion of European integration into the development of creative industries in Ukraine. Integration into the European cultural space opens up new markets for Ukrainian artists and designers, promotes the popularization of Ukrainian art abroad, and attracts foreign investment in the cultural sphere. For students of the specialty «Fine arts, decorative arts, and restoration», this means expanded prospects for practical work, the ability to realize their creative ideas in international projects, and the ability to participate in shaping the current cultural landscape of Ukraine as an indivisible part of European cultural diversity [3].

We think that European integration is shaping the European identity of Ukrainian youth. Through participation in international educational and cultural programs and knowledge of European values and cultural heritage, students become aware of part of the European diversity. This promotes the development of tolerance, intercultural communication, and the utmost importance of preserving cultural diversity. For future practitioners in the field of mysticism and restoration, this is especially important, and their professional activity is closely related to saving and popularizing cultural heritage as an indivisible part of the European cultural tradition [4].

Moreover, European integration is a strong incentive for the development of the worldly capabilities of Ukrainian youth, especially for students who are pursuing local specialties. Harmonization of educational standards, expansion of academic mobility,

development of international cooperation, support of creative industries, and the formation of European identity – all this opens up new prospects for professional growth and self-realization of emerging artists, decorators, and restorers, consistent with their successful integration into the European cultural and professional world space.

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## DEVICE FOR COMBATING THE VARROA MITE

Beekeepers around the globe are continuously challenged by a major threat that jeopardizes not only honey yields but also the stability of ecosystems. This threat comes

in the form of Varroa destructor, a parasitic mite that infiltrates beehives, transmits diseases, and significantly weakens bee colonies, often resulting in their collapse [1]. Although various countermeasures exist—ranging from chemical treatments to biological agents and technological tools—they often present limitations such as bee toxicity, resistance development, or complexity in implementation [2]. To address these issues, this study presents a novel, safer alternative: the use of controlled sound vibrations as a means of dislodging the parasite.

Figure 1 presents the block diagram of a bee protection device against varroatosis. The device consists of four main components: a power supply, a signal generator, a power amplifier, and an acoustic transducer.

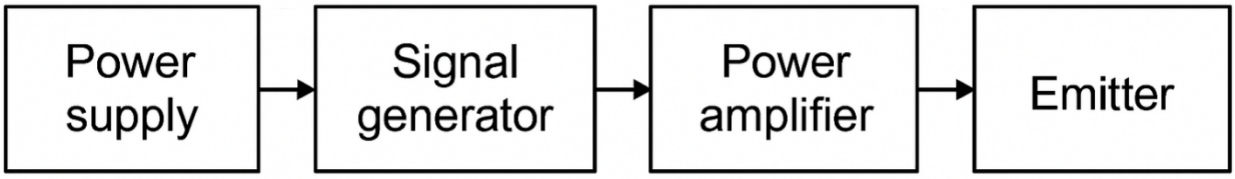


Figure 1. Block diagram of a device for protecting bees from varroatosis

The power supply is responsible for delivering electricity to the generator, amplifier, and transducer. One of the primary design considerations is energy efficiency, allowing the system to operate with low-power sources like solar panels. This feature is especially critical for beekeeping locations that are situated far from conventional power grids.

The signal generator produces sound waves in a controllable frequency range. Since the system is intended for use in experiments aimed at identifying the most effective vibration frequencies for mite suppression, the generator must support variable frequency output.

The power amplifier boosts the generator’s signal to a level sufficient for the acoustic transducer to emit sound vibrations that can affect the mites. Compatibility between the amplifier and transducer is essential to ensure optimal performance.

Commercially available acoustic transducers will be used for this application, selected from a range of proven, mass-produced models.

The development of a device targeting *Varroa destructor* addresses the growing need for a safe, effective, and environmentally friendly method of protecting honeybee colonies. By utilizing acoustic vibrations rather than chemicals, the system minimizes harm to bees while avoiding contamination of hive products or nearby ecosystems. This eco-conscious approach aligns with current global efforts to preserve biodiversity and support pollinator health.

The device also demonstrates clear economic advantages. Reducing the dependency on costly chemical treatments lowers operational expenses, while the improved vitality of bee colonies often leads to increased honey production. This contributes to the overall profitability and sustainability of beekeeping practices.

The device's low energy consumption ensures stable performance even in remote field environments, making it suitable for use with alternative power sources like solar panels.

Another strength lies in its versatility. The system can be easily integrated with existing Varroa control strategies, including chemical, mechanical, or thermal approaches. This adaptability allows beekeepers to tailor their pest management methods based on colony health, seasonal factors, and specific environmental challenges.

This work proposes a method that involves short-term exposure of bees and mites to vibrations generated by acoustic waves using a device composed of a generator, a power amplifier, and an emitter. The device can generate oscillations in the range of 70 Hz to 20 kHz, with output power of up to 20 watts.

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## PSYCHOGENETICS: HOW GENES SHAPE OUR PSYCHE

Everyone has thought about their family roots at least once in their lives and heard their relatives say, «You look like your mother» or «You look like your father». And in the mid-20th century, at the intersection of psychology and genetics, psychogenetics, the science of heredity and variability of mental and psychophysiological properties, emerged. The field is trying to understand how heredity shapes individual differences in behavior, emotions, and cognitive abilities [1, p. 45].

One of the first major studies was the study of twins by scientist Hermann Siemens in 1924. This method showed that the similarities between identical twins (100% genetic similarity) and fraternal twins (50% genetic similarity) allow us to estimate the influence of genetics [1, p. 47].

In terms of methodology, we can mention genome-wide association studies (GWAS), which allow us to identify links between specific genes and psychological characteristics using large population samples [2, p. 210]. But it does not stop there and shows that genetics can explain about 50% of the variation in intelligence. Genetic factors interact with the environment to shape cognitive abilities [2, p. 215]. Also, mental disorders, such as depression, bipolar disorder, or schizophrenia, have been studied extensively. There are many cases where the risk of developing schizophrenia in relatives of patients is higher compared to the general population [3, p. 110].

Nowadays, science confirms that many aspects of the human psyche (intelligence, temperament, level of aggression) have a genetic basis. This means that each person has a certain «code» that sets the basic parameters of mental development [2, p. 205]. If we take into account personality traits such as extraversion and neuroticism, they have a significant genetic component. Studies have shown that about 40-60% of the variation in these traits can be explained by genetics [3, p. 112].

Along with the experiments, there are also discussions and philosophical questions, such as, are we responsible for our actions if they are determined by our genes? An example of this is a person with a genetic predisposition to aggression who was brought up in a friendly family that teaches him or her self-control. In this case, the possibility that he or she will behave aggressively will be significantly reduced because upbringing has influenced the manifestation of his or her hereditary traits [1, p. 50]. This example clearly shows us that even strong hereditary tendencies do not determine a person's fate and can be mitigated or even compensated for by social influence.

We can conclude that psychogenetic research has not only theoretical but also practical value, as it allows us to better understand the nature of mental disorders, potential treatments, and the impact of education on the psychological development of the individual [1, p. 57]. Thus, psychogenetics is an important tool in understanding the human psyche and development, helping to better understand both personal and collective human experience, showing how deeply our nature is a combination of heredity and environmental influences.

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# ENGLISH FOR SOCIAL WORKERS: COMMUNICATION STRATEGIES IN THE CONTEXT OF EUROPEAN INTEGRATION

In the modern context of European integration, the role of English as a global language of professional communication becomes particularly significant for social workers. Effective communication with international partners, participation in projects, and access to up-to-date resources are crucial components of training in social work.

English for Specific Purposes (ESP) aims to meet the linguistic and communicative needs of future professionals. For social workers, ESP includes terminology, intercultural communication skills, and understanding the specifics of mental health discourse. The application of ESP methodology in education contributes to the formation of a competent and flexible specialist who can interact effectively in diverse multicultural settings.

Recent studies highlight the importance of simulation-based learning, role-playing, and case studies in ESP training for social workers. These methods facilitate the development of empathy, active listening, and ethical reasoning in English. Moreover, participation in international exchange programs and online conferences allows students to gain real-life communication experience.

In conclusion, incorporating ESP into the training of social work specialists is essential in preparing them for international collaboration and addressing the challenges of globalization. The development of English language skills must be integrated into the core curriculum to ensure future professionals are well-equipped for cross-border communication.

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## GAMIFICATION IN ENGLISH LANGUAGE TEACHING: MODERN APPROACHES AND TOOLS

With the rapid development of digital technologies in the field of education, the use of game-based teaching methods (gamification) in teaching English as a foreign language (EFL/ESL) attracts special attention from researchers. The presented work is aimed at analyzing the use of gamification, its potential advantages and disadvantages, as well as frequently used elements in the design of game-based learning activities. The results of the analysis indicate the growing popularity of gamification in the EFL/ESL context and demonstrate its effectiveness in teaching a wide range of language skills, including vocabulary, grammar, listening, speaking, reading, writing, and even literature. Gamification covers various educational levels but is especially actively used in higher education.

The term gamification is relatively new. It was initially used in a marketing context to describe the implementation of game mechanisms in non-game environments

to increase consumer engagement. In the following years, the concept of gamification has been adapted to other fields, including education.

According to Kapp's definition, a game is a system in which participants interact under abstract challenge, constrained by rules, feedback, and a measurable outcome that evokes an emotional response [3]. This definition serves as a theoretical basis for understanding gamification as a process of implementing game elements and approaches in non-game contexts, including educational ones. Gamification does not necessarily imply the use of full-fledged digital games but can include individual principles and elements of game design, such as goals, feedback, challenges, levels, and repetition of tasks. For the effective implementation of gamification in educational practice, it is necessary to take into account the key principles of game design. These include, in particular, the ability to repeatedly complete tasks to accumulate experience, the presence of a clearly defined goal, and the provision of immediate feedback to maintain interest and form a «flow». Thus, gamification in the educational environment is aimed at creating a more interactive, engaging, and reflective learning process that promotes active participation of students.

The integration of gamification into English Language Teaching (ELT) has emerged as a transformative approach to enhance learner engagement and motivation. Gamification involves the application of game-design elements in non-game contexts to create more dynamic and interactive learning experiences. In ELT, this strategy leverages tools and techniques that make language acquisition more appealing and effective for students.

The analysis shows that game approaches are effectively integrated into various educational environments, such as the flipped classroom and ubiquitous learning supported by mobile devices and network technologies. These environments promote learner engagement, make learning possible anywhere and at any time, and, in combination with gamification, allow for innovative teaching strategies aimed at increasing learning motivation and achieving higher results. However, the use of gamification in the EFL/ESL context remains controversial, especially in countries with high examination requirements, such as China, where teaching is mainly focused on

preparing for final certification. This emphasizes the importance of matching teaching methods with educational goals and the requirements of a specific education system.

Despite the growing recognition of gamification's benefits, its implementation in ELT faces several challenges. Educators often encounter difficulties related to selecting appropriate gamified tools, aligning them with curriculum objectives, and assessing their impact on learning outcomes. Additionally, there is a need for empirical evidence to substantiate the effectiveness of gamification in diverse educational settings.

This study aims to explore contemporary gamification approaches and tools in ELT, evaluate their effectiveness in enhancing student engagement and learning outcomes, and provide practical recommendations for educators seeking to integrate gamification into their teaching practices.

Recent research indicates that gamification positively influences student motivation and engagement in language learning. For instance, a systematic review by S. Zhang and Z. Hasim highlights that gamified elements can create authentic language learning environments and improve learners' attitudes toward English [5, p. 2].

Digital platforms such as Kahoot!, Quizizz, and Duolingo have been widely adopted in ELT to incorporate gamified elements like points, leaderboards, and badges. These tools facilitate interactive quizzes and real-time feedback, making learning more engaging. The use of such platforms has been shown to enhance vocabulary acquisition and retention among students [4, p. 5].

Moreover, the incorporation of storytelling and role-playing games in language instruction has been effective in developing communicative competencies. These methods provide contextualized language practice, allowing students to immerse themselves in realistic scenarios and practice language skills in a meaningful context [2, p. 10].

However, challenges persist in the implementation of gamification. Educators must ensure that game elements align with learning objectives and do not overshadow educational content. Additionally, considerations regarding accessibility and the digital divide must be addressed to ensure equitable learning opportunities for all students [1, p. 15].

Gamification presents a promising avenue for enhancing English language teaching by fostering increased student engagement and motivation. While digital tools like Kahoot!, Quizizz, and Duolingo offer practical means of integrating game elements into language instruction, educators must thoughtfully align these tools with pedagogical goals. Future research should focus on longitudinal studies to assess the long-term impact of gamification on language proficiency and explore strategies to overcome implementation challenges in diverse educational contexts.

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## SECONDARY RAW MATERIAL MANAGEMENT

Polymers form the core of numerous structural materials, which are expected to possess high strength, elasticity, and hardness—properties that, in many cases, only metals can rival. The production of synthetic polymers such as plastics, rubbers, lacquers, synthetic fibers, and materials based on them is rapidly expanding. Due to the vast array of their applications, listing them all is nearly impossible.

Secondary raw materials play a crucial role within the framework of the circular economy. Recycling technologies enable the efficient reintegration of materials into production cycles, thereby reducing dependency on primary, often non-renewable, resources. Among all produced plastics, 41% is used for packaging, with nearly half of that allocated to food packaging [1].

The growing use of plastic packaging is driven by its convenience, safety, affordability, and aesthetic appeal. However, packaging made from synthetic polymers comprises around 40% of household waste and is essentially non-biodegradable. Consequently, each person is estimated to generate approximately 40–50 kg of plastic packaging waste annually.

The issue of polymer waste recycling has become increasingly important, not only from an environmental protection perspective but also due to the scarcity of raw polymer materials. In this context, plastic waste emerges as a valuable source of both raw materials and energy.

Despite the variety of challenges associated with polymer waste recycling, these issues are not insurmountable. Effective solutions, however, require the organization of collection, sorting, and initial processing of used materials and products, along with the development of pricing systems for secondary raw materials that would incentivize companies to engage in recycling. Moreover, it is essential to create efficient recycling technologies, modify secondary polymers to enhance quality, manufacture specialized equipment for processing, and compile a product range made from recycled polymers.

Nonetheless, environmental protection measures demand significant capital investment. The cost of processing and disposing of plastic waste is approximately eight times higher than that of industrial waste and nearly three times greater than household

waste disposal costs. This is largely due to the specific properties of plastics that complicate or even preclude the use of conventional solid waste treatment methods.

According to the Organization for Economic Co-operation and Development (OECD, 2019), two out of five circular economy business models are directly linked to the use of secondary raw materials. These models emphasize the use of environmentally friendly biological resources and renewable materials, converting waste into valuable inputs.

As such, analyzing the secondary raw materials market is vital at both the European Union and individual country levels. The updated EU Circular Economy Action Plan (2020) highlights the importance of secondary resources – including aluminum, paper, cardboard, wood, glass, plastic, textiles, construction, and organic waste – in the production of new goods. The European Environment Agency's 2022 report, *«Exploring the European Secondary Raw Materials Markets»* (zu Castell-Rudenhausen et al., 2022), offers a comprehensive analysis of eight key market segments.

The report identifies specific areas for improving sustainability in sectors such as plastic production, textiles, electronics, the food industry, water supply, packaging, transportation, construction, and battery technologies. Trade in waste and secondary materials plays a key role in environmental preservation, social equity, and economic stability. Proper regulation of this sector promotes responsible waste management, reduces pollution levels, and fosters the development of eco-friendly recycling practices. The European Union, as part of its sustainable development strategy, views waste not as a problem but as a resource that can be reintegrated into production.

According to Article 6 of the Law of Ukraine «On Waste Management» No. 2849-IX dated December 13, 2022 [2], the preparation of waste for reuse, recycling, and other recovery operations is ensured through the establishment and functioning of waste processing facilities, the introduction of economic instruments, and the setting of specific targets for waste collection, preparation for reuse, recycling, or other recovery methods, along with additional supportive measures. Separately collected waste intended for reuse or recycling must not be disposed of by incineration or other means,

except for waste generated during sorting or other treatment processes and for materials unsuitable for reuse or recycling.

It is important to emphasize that utilizing waste is a necessary step aimed at the conscious reduction of the ever-growing volume of waste. Current waste recycling technologies are far from perfect and require continuous innovation, including the development of new ideas, technologies, and equipment.

Nevertheless, the waste recycling industry, including the processing of polymer waste, must become an integral part of the economy and environmental protection systems in every region, every country, and globally [3]. No living being, including humans, can survive and thrive in an environment overwhelmed by its own waste.

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## ART THERAPEUTIC EFFECT OF DRAWING ON EMOTIONAL STATE

In contemporary psychological and educational practice, there is a growing interest in the use of art as a tool for emotional self-regulation. Among various forms of artistic expression, drawing stands out as an accessible and intuitive activity that has

demonstrated significant effectiveness in reducing psycho-emotional tension, especially in work with children. The relevance of this topic lies in the need for a scientific understanding of the mechanisms through which drawing influences emotional states and the identification of optimal conditions for its use in educational and therapeutic contexts.

Given the increasing integration of creative methods into psychological and pedagogical practices, drawing is attracting substantial scholarly attention as a potentially effective strategy for emotional regulation in childhood. A study conducted by Brechet, D'Audigier, and Audras-Torrent aimed to empirically examine the impact of different types of drawing activities on children's ability to manage negative emotions. The researchers compared three experimental conditions: drawing for emotional expression, drawing as a distraction, and free drawing without a specific goal. The findings indicated that distraction-focused drawing was most effective in reducing negative emotional arousal in children. This approach was also associated with greater emotional engagement and higher levels of subjective satisfaction.

The data highlight the considerable applied potential of drawing as a means of emotional self-regulation in children, particularly within educational settings and psychological support services. Drawing is viewed as a low-barrier, intuitive, and effective technique for alleviating emotional stress, offering promising opportunities for its integration into programs for psycho-emotional development and support [1].

Further empirical evidence comes from Drake, Eizayaga, and Wawrzynski, who compared two emotional regulation strategies in children: emotional expression and cognitive distraction through drawing. Their findings reinforced the superior efficacy of distraction-based drawing in reducing the intensity of negative emotions such as sadness and anger. Participants in the distraction condition reported lower levels of emotional distress and higher levels of satisfaction and engagement. The authors highlight cognitive attention switching as a key mechanism underlying emotional self-regulation in childhood. They also emphasize the role of moderating factors, such as the type of emotion experienced, in influencing the effectiveness of the intervention. Distraction-based drawing emerges as a practically valuable, accessible, and emotionally safe tool

for implementation in both educational and therapeutic contexts [2].

Gerge and Oepen provide an in-depth analysis of the emotional regulation mechanisms activated through artistic activity. They conceptualize art-making as a complex psycho-emotional process that incorporates cognitive-behavioral and sensory-affective strategies. These include emotional expression, cognitive reframing, distraction, reflective integration of experiences, and reduction of physiological arousal via rhythmic or tactile engagement. The authors stress the context-dependent nature of these mechanisms, influenced by factors such as the individual's intention, emotional awareness, personality traits, and the specific artistic process employed. They also caution against unstructured emotional expression, particularly when working with trauma, as it may evoke latent affective material without adequate therapeutic containment. Art-making, therefore, is seen as a dynamic, multifaceted self-regulatory practice with high therapeutic potential, necessitating an individualized and clinically grounded approach [3].

Building on this framework, Gerge and Oepen propose a theoretically grounded model of art-based emotional regulation tailored for individuals with major depressive disorder. This model integrates insights from neurobiology, psychodynamic attachment theory, and body-centered approaches. The intervention follows a phased therapeutic process – starting with the stabilization of the emotional state using sensorimotor and rhythmic techniques, then moving toward deeper expressive and integrative work. Later stages involve narrative-figurative reconstruction to facilitate cognitive reappraisal and emotional processing. The model serves not only as a therapeutic roadmap but also as a theoretical foundation for the systematic application of art-based methods in the treatment of depressive symptoms, balancing clinical efficacy with empathic support [4].

In summary, theoretical and empirical evidence supports the significant potential of drawing as a means of emotional self-regulation, particularly in childhood. Drawing – especially when used as a strategy for cognitive distraction – has proven effective in mitigating negative emotions, increasing engagement, and enhancing subjective well-being. When tailored to individual needs and contextual variables, artistic activity

activates diverse self-regulatory mechanisms, including emotional expression and sensory integration. Accordingly, drawing can be regarded as a scientifically substantiated, emotionally safe, and adaptable tool suitable for application in educational and clinical environments, provided it is implemented with an individualized and methodologically sound approach.

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## THE IMPORTANCE OF ENGLISH FOR EMPLOYMENT IN THE IT SECTOR

In today's world of information technology, English plays a crucial role in the professional development of specialists. It is the international language of communication, opening up broad opportunities for career growth and effective work in the IT sector. Proficiency in English significantly increases a specialist's

competitiveness in the job market and provides access to the most relevant technologies and resources.

One of the main reasons for the importance of English in IT is that most technical documentation, training materials, and software are created in English. Without this knowledge, developers, testers, analysts, and other IT specialists have to spend additional time on translation, which can negatively impact productivity [1, p. 45].

Furthermore, English is the language of international communication, making it essential for working in global companies or as a freelancer. Many companies operate in the international market, and their clients, partners, and colleagues may be from different countries. Knowing English helps to overcome language barriers and communicate effectively [2, p. 30].

Another argument in favor of learning English is the opportunity to participate in international conferences, hackathons, and other professional events. This not only enhances skills but also expands professional connections and opens new career opportunities [3, p. 15-18].

English is also crucial for effective interaction with clients, who often work in different countries and time zones. Understanding specific terminology and properly expressing thoughts in English helps to avoid misunderstandings and significantly improves team communication quality, especially in international teams [1, p. 78].

Experienced programmers, testers, and system analysts note that English proficiency allows them to read official documentation, stay updated on new technological trends, and find answers to professional questions on forums and communities such as Stack Overflow, GitHub, and others. Many of these resources lack quality translations in other languages [2, p. 55].

Another important aspect is the ability to obtain international certifications such as AWS Certified Solutions Architect, Google Professional Cloud Architect, or Microsoft Certified: Azure Solutions Architect Expert. All these certifications are conducted in English, and obtaining them significantly increases the chances of securing high-paying jobs in leading global companies [3, p. 45].

In addition to technical knowledge, English is necessary for passing interviews at

international companies. Many recruiters and HR managers assess the level of English proficiency during the first meeting, and without confident language skills, it is difficult to get the desired position. Interviews may include technical questions, case studies, and communication with future colleagues in English [1, p. 102].

Thus, knowledge of the English language is not only desirable but also essential for a successful career in IT. It allows professionals to remain competitive, communicate with international partners, access the latest knowledge, and grow professionally. Therefore, students, young professionals, and experienced developers should constantly improve their language skills and align with international standards in their profession.

Also, English proficiency allows IT professionals to effectively work with modern development tools and platforms. Many programming languages, frameworks, and software solutions use English-based syntax and documentation, making it essential for understanding and troubleshooting issues efficiently [2, p. 67].

IT specialists who aspire to work in multinational companies or relocate abroad must possess strong English skills. Many countries with thriving tech industries, such as the United States, Canada, Germany, and the United Kingdom, require English proficiency for job applications, work permits, and successful integration into local work environments [3, p. 92].

Moreover, participating in online IT courses, webinars, and mentorship programs often requires an understanding of English. Most high-quality courses from platforms like Coursera, Udemy, and edX are conducted in English, giving learners access to knowledge from leading global universities and tech experts [1, p. 120].

Furthermore, English is widely used in technical support and troubleshooting. IT professionals often need to communicate with support teams of global tech companies such as Microsoft, Google, or Amazon. Submitting support tickets, reading knowledge base articles, and engaging in discussions with support engineers require a strong command of English [2, p. 135].

Ultimately, English language proficiency empowers IT professionals to stay ahead in the competitive industry, enhance their career prospects, and achieve

professional success. Given the rapid advancement of technology and the globalized nature of the IT sector, continuous improvement in English skills is a necessity for anyone aiming for long-term growth in the field.

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## YOUTH ACTIVITY IN ADDRESSING ENVIRONMENTAL PROBLEMS

Within the framework of contemporary global environmental challenges, youth are emerging as pivotal actors of change [1]. The COIL (Collaborative Online International Learning) project provided a unique opportunity for students of Volodymyr Dahl East Ukrainian National University and Front Range Community College, Fort Collins, Colorado, USA, to exchange experiences in addressing environmental issues [2].

The students had the opportunity to communicate and work on joint tasks, sharing knowledge and experience. This collaboration demonstrated that, despite differences in geography and socio-economic conditions, Ukraine and the United States face similar environmental challenges: climate change [5], air and water pollution [3] , and ecosystem degradation [4]. As future professionals, we recognize that the responsibility for the future of our environment rests squarely on our generation. Youth in both countries are taking proactive stances in promoting sustainable development through both individual and collective initiatives.

Environmental issues are growing increasingly urgent at both global and regional levels. In Ukraine, we face significant challenges stemming from the consequences of military actions, climate change, environmental pollution, floods, and wildfires. These problems demand attention not only from governments and researchers but also require active engagement from youth, who possess the potential to become a driving force for transformative change.

1. Assessment of Regional Environmental Conditions: Comparative analysis conducted based on a joint project between students.

Wildfires in Colorado represent one of the region's most critical environmental challenges, significantly deteriorating air quality by increasing concentrations of fine particulate matter (PM2.5) and toxic substances such as carbon monoxide [3]. This exacerbates public health risks, particularly among vulnerable groups, including children and the elderly. Additionally, wildfires cause severe ecosystem disruption, leading to wildlife mortality and reduced biodiversity [4].

2. Environmental Situation in Eastern Ukraine: Impact of Military Actions

The environmental situation in Eastern Ukraine has been significantly exacerbated by the consequences of military activities. One of the most severe consequences is soil degradation due to contamination with heavy metals and explosive residues. Damage to industrial facilities has led to toxic substance leaks into soil and water systems. The loss of forest cover has reduced carbon sequestration capacity, further aggravating climate change impacts [5].

Both regions face severe ecosystem degradation and public health threats. While the root causes differ, potential solutions share common ground:

1) Reforestation programs and land rehabilitation initiatives to combat soil degradation; [4]

2) Integrated monitoring systems for real-time air/water quality assessment; [3]

3) Environmental education frameworks coupled with community-based conservation programs [1].

2. Individual contribution to nature protection

| Activity Area | USA | Ukraine |
|---|---|---|
| Waste Management | Sorting, recycling | Secondary resource utilization |
| Energy Efficiency | Renewable energy | Energy-saving technologies |
| Ecosystem Restoration | Forest protection programs | Greening of affected territories |

An important goal for youth is integrating environmental values into all spheres of life, as only a systemic approach can lead to sustainable development [1]. Young people are key agents of change in addressing environmental challenges, and their individual actions, education efforts, and active participation in public life hold great potential [2]. Collaboration between countries to share knowledge and implement joint initiatives is essential to overcoming global environmental crises.

The future of our environment depends on today's actions – and youth are the driving force behind this change.

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