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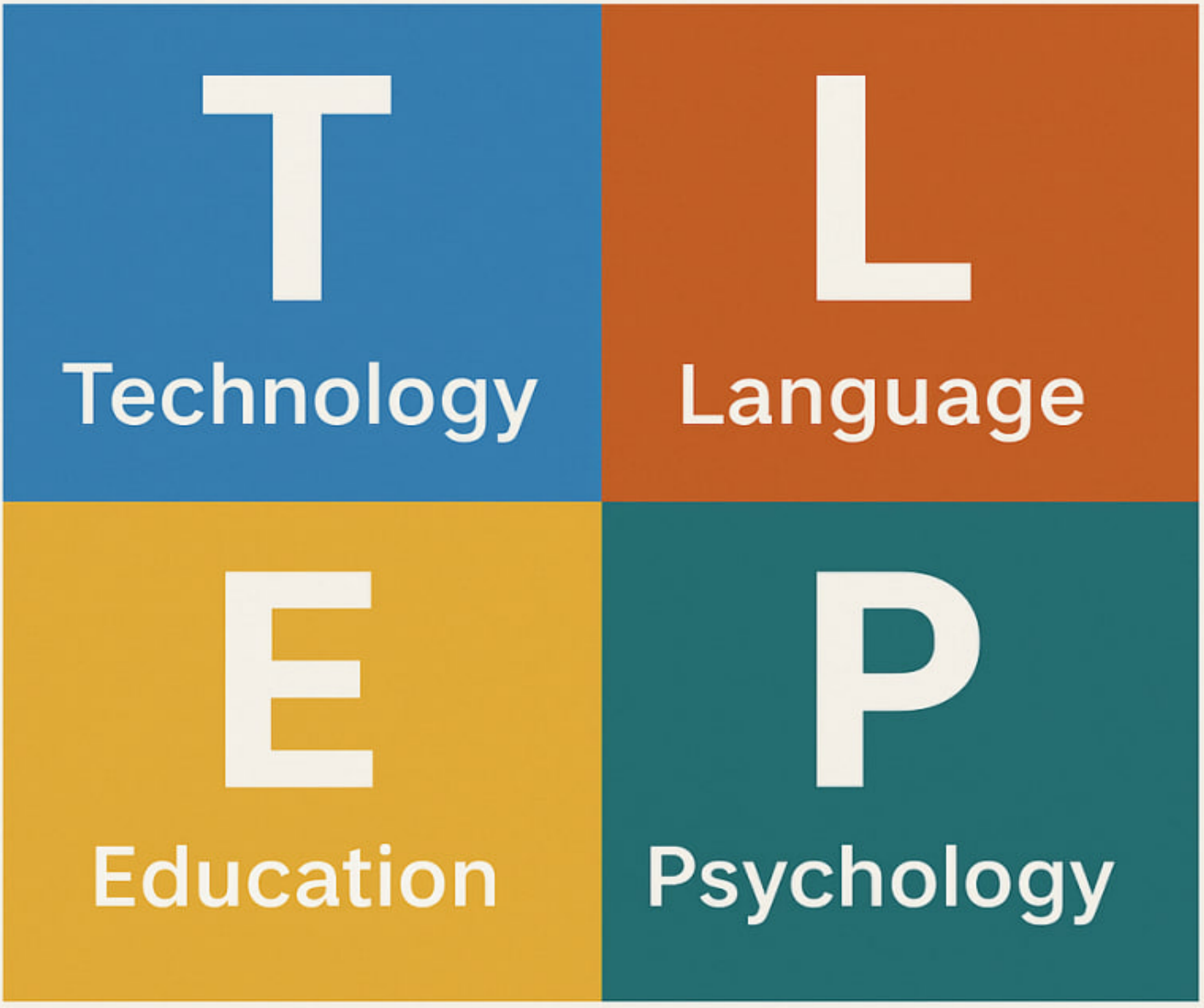

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Digital Pedagogy in Indian Higher Education: Transforming Learning in the Post-Pandemic Era

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Abstract
The COVID-19 pandemic accelerated the digital transformation of higher education across the globe, with India witnessing a massive shift from traditional classroom teaching to virtual learning environments. This paper investigates the emergence and impact of digital pedagogy in Indian higher education post-2020. It explores how educators and institutions adapted to online modes of teaching, the technological tools adopted, pedagogical challenges faced, and student responses to this new model. Drawing on interviews, policy documents, and recent empirical studies, the article evaluates the long-term implications of digital pedagogy for curriculum design, inclusivity, and learner engagement. The findings indicate that while digital pedagogy opened doors to innovation and access, issues of digital inequality, teacher preparedness, and pedagogical adaptation continue to pose challenges. The paper concludes with recommendations for sustainable integration of digital pedagogy in India's higher education system.
Keywords: digital pedagogy, Indian education, higher education, e-learning, online teaching, post-pandemic learning

Introduction

The educational disruption caused by the COVID-19 pandemic in early 2020 was unprecedented in scale and speed. In India, universities and colleges were forced to suspend physical classes and rapidly transition to digital learning platforms. This unexpected shift catalyzed the adoption of digital pedagogy—teaching strategies that rely on digital tools and technologies to design, deliver, and assess learning.

Prior to the pandemic, the use of technology in Indian higher education was largely supplementary. E-learning platforms, MOOCs, and Learning Management Systems (LMS) were available but not widely adopted across the board. However, the closure of campuses compelled educators to explore tools such as Zoom, Google Classroom, Microsoft Teams, and indigenous platforms like SWAYAM and DIKSHA. This sudden reliance on digital tools raised fundamental questions: How prepared were Indian universities for this transition? How did teachers and students cope? More importantly, can digital pedagogy be sustainably integrated into higher education, or was it merely a stopgap?

This article seeks to answer these questions through an examination of digital pedagogy in Indian higher education. It evaluates its effectiveness, identifies existing gaps, and discusses the future of digitally-enhanced teaching and learning in Indian universities. The aim is to provide a comprehensive understanding of how digital pedagogy is reshaping Indian academia, not just as a response to crisis but as a vision for the future.

Methodology

This study adopts a mixed-methods approach, combining qualitative and quantitative data. Primary data were collected through semi-structured interviews conducted with 35 faculty members and 50 undergraduate and postgraduate students from ten public and private universities across India, including the University of Delhi, Banaras Hindu

University, Jadavpur University, and Amity University.

In addition, secondary data were sourced from government reports, UGC circulars, institutional surveys, and journal articles published between 2020 and 2024. Online forums, webinars, and conference proceedings focusing on educational technology in India were also reviewed to gain broader insights.

The data were coded and thematically analyzed under three core dimensions of digital pedagogy: instructional design, technological infrastructure, and learner engagement. The analysis aimed to uncover patterns, gaps, and best practices that have emerged during the digital transition.

Results

The findings indicate that digital pedagogy has significantly influenced the structure and delivery of higher education in India. Most universities managed to transition to online platforms within a few weeks of the lockdown announcement, but the quality and consistency of digital instruction varied considerably across institutions.

In terms of instructional design, many educators initially struggled with translating in-person lectures to engaging online content. Faculty reported difficulty in redesigning courses to fit the digital format, citing lack of training, limited experience with edtech tools, and challenges in assessing student performance. Over time, however, institutions began offering professional development workshops, and faculty gradually adapted to more interactive methods such as breakout discussions, live polling, and asynchronous video content.

Technologically, disparities were stark. Urban universities and private institutions had better infrastructure and access to tools, while rural colleges and state universities faced bandwidth limitations, outdated equipment, and inadequate LMS support. Students from remote areas often had to rely on mobile data, which was insufficient for sustained video-based learning. This digital divide resulted in an uneven learning experience and raised concerns about educational equity.

In terms of student engagement, initial enthusiasm gave way to fatigue and disengagement in many cases. Students appreciated the flexibility of online classes but missed peer interaction, mentorship, and the holistic campus experience. Surveys indicated that while 78% of students valued recorded lectures and online resources, only 41% found digital classes as engaging as in-person sessions. Challenges such as screen fatigue, mental health issues, and lack of motivation were frequently reported.

Despite these hurdles, some institutions demonstrated remarkable innovation. For example, IIT Bombay developed a robust hybrid learning model combining live lectures with digital labs and simulations. The University of Hyderabad used open-source platforms to create inclusive learning environments for differently-abled students. Private universities experimented with AI-based learning analytics to personalize student support and track academic progress.

Discussion

The post-pandemic rise of digital pedagogy in India offers valuable lessons. First, it highlighted the critical role of teacher training in the success of any educational reform. Many faculty members were ill-equipped to navigate digital tools or understand the pedagogy behind online instruction. Institutions that invested in continuous digital capacity building for teachers reported better student outcomes and satisfaction.

Second, digital pedagogy revealed both the potential and perils of technological reliance in education. On the one hand, it allowed for expanded access, especially for students with physical disabilities, caregivers, or those in remote areas. On the other hand, it exacerbated existing inequalities for students without stable internet or personal

devices. While initiatives like PM eVIDYA and SWAYAM aimed to bridge this gap, implementation remains inconsistent.

Third, assessment practices underwent a radical shift. With the suspension of traditional exams, universities experimented with open-book tests, project-based evaluations, and oral assessments. While these methods fostered deeper learning, concerns about plagiarism, identity verification, and fairness persisted. A clear regulatory framework is needed to guide digital assessment ethics and standards.

Moreover, digital pedagogy has spurred conversations about student agency and self-directed learning. Students were required to manage their schedules, access resources independently, and communicate proactively—skills that are vital in the 21st-century workforce. However, such autonomy was challenging for many learners who lacked support structures at home.

Institutional leadership also played a key role. Universities with proactive administrations were able to transition more smoothly. For instance, Jawaharlal Nehru University created a centralized digital learning cell that offered technical support, curated OER content, and facilitated communication between departments. Collaboration between academic and IT teams proved essential for sustaining digital engagement.

Culturally, the shift to digital pedagogy also disrupted traditional hierarchies in the classroom. Online platforms allowed students to ask questions via chat, give anonymous feedback, and learn at their own pace, leading to a more learner-centric model. While some faculty resisted this change, others embraced it as an opportunity to democratize knowledge.

Finally, the environmental and logistical benefits of digital pedagogy cannot be overlooked. Online meetings, paperless submissions, and remote access to libraries reduced carbon footprints and operational costs. Many universities are now considering hybrid models as a permanent feature, blending the best of online and offline learning.

Conclusion

Digital pedagogy has emerged as a transformative force in Indian higher education, offering new opportunities for innovation, inclusivity, and learner empowerment. While its adoption was born out of necessity, its potential for long-term impact is undeniable. The transition to online teaching exposed systemic gaps but also catalyzed much-needed reforms in curriculum design, assessment strategies, and institutional planning.

To ensure the sustainable integration of digital pedagogy, India must invest in equitable digital infrastructure, prioritize faculty development, and formulate clear policy frameworks. Public-private partnerships can play a vital role in scaling digital tools, while universities must foster a culture of experimentation and reflective practice.

As India aspires to become a global knowledge hub, digital pedagogy will be central to realizing the goals of the National Education Policy (NEP) 2020. By leveraging technology thoughtfully and inclusively, Indian higher education can redefine learning for the future—one that is flexible, engaging, and responsive to the needs of a diverse student population.

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The Role of Artificial Intelligence in Enhancing E-Governance in Uzbekistan

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Abstract
Uzbekistan is currently undergoing rapid digital transformation as part of its national development strategy. One of the most promising aspects of this transition is the integration of Artificial Intelligence (AI) into e-governance systems. This research explores the evolving role of AI in Uzbekistan's digital governance ecosystem, focusing on its potential to streamline public services, reduce bureaucratic inefficiencies, and enhance transparency. Drawing from policy reviews, case studies, and global benchmarks, the study highlights how AI technologies—such as machine learning, natural language processing, and predictive analytics—are being adopted by Uzbek governmental institutions. While AI brings numerous benefits, it also raises critical challenges, including data privacy concerns, algorithmic biases, infrastructural limitations, and skill shortages. The paper concludes that for AI to be a sustainable tool in Uzbekistan's e-governance, a multi-stakeholder approach involving legal frameworks, capacity building, and public awareness is essential.
Keywords: Artificial Intelligence, e-governance, Uzbekistan, digital transformation, public services, ICT

Introduction

In recent years, Uzbekistan has taken significant steps toward modernizing its public sector through the use of digital technologies. As part of its “Digital Uzbekistan 2030” strategy, the government has prioritized the implementation of e-governance systems aimed at increasing efficiency, transparency, and citizen satisfaction. At the forefront of this transformation is Artificial Intelligence (AI), a technology that promises to revolutionize how governments operate and interact with their citizens.

AI, which refers to the simulation of human intelligence processes by machines, has already shown potential in fields such as healthcare, finance, and education. Its application in the public sector is particularly compelling due to the volume and complexity of governmental operations. From automating routine administrative tasks to providing real-time citizen support via chatbots, AI can significantly improve the speed and quality of public services.

In Uzbekistan, several pilot projects and digital initiatives have already hinted at the transformative power of AI. For instance, the Ministry for the Development of Information Technologies and Communications has introduced machine learning tools for monitoring service performance, while the Ministry of Justice has experimented with AI-based legal advisory systems. However, the full integration of AI into governance remains in its early stages and is faced with both technical and socio-political challenges.

This article examines how AI is being integrated into Uzbekistan’s e-governance landscape. It discusses the technological, institutional, and regulatory frameworks required to support this transition and analyzes the opportunities and barriers faced by the government and stakeholders. By drawing on local developments and international comparisons, the study aims to provide actionable insights for policymakers and technology developers in Uzbekistan.

Methodology

The research employed a qualitative methodology, supplemented by relevant quantitative data where available. Sources include national strategic documents, ministerial reports, AI policy briefs, and international studies on AI and governance. A total of 15 semi-structured interviews were conducted with ICT professionals, government officials, and academics in Tashkent, Samarkand, and Fergana.

The data were analyzed through thematic coding, focusing on four key areas: AI applications in current Uzbek e-governance platforms, institutional readiness, technological infrastructure, and public perception. Comparative analysis with countries like Estonia, South Korea, and Singapore was conducted to identify best practices and lessons that could be adapted for Uzbekistan.

In addition, three AI pilot projects currently running under government ministries were closely studied: (1) Chatbots in public inquiry services, (2) Automated fraud detection in government procurement, and (3) AI-based traffic monitoring in urban areas. These case studies served as microcosms of the broader transition to AI-enhanced governance.

Results

The integration of AI into Uzbekistan's e-governance ecosystem has shown promising results but remains limited in scope. The three case studies revealed specific strengths and gaps.

The chatbot project, implemented by the Ministry of Public Services, uses natural language processing to interact with users in Uzbek and Russian. The bot handles frequently asked questions, provides updates on document processing, and redirects users to appropriate portals. Since its launch in 2022, the chatbot has reduced the load on call centers by 40%, according to official figures. However, it struggles with more complex or ambiguous queries due to linguistic limitations in Uzbek AI datasets.

The second project, focused on procurement fraud detection, utilizes anomaly detection algorithms to flag suspicious bidding patterns. This tool, developed in partnership with a local IT startup, has identified multiple instances of vendor collusion and price manipulation. While the results have been encouraging, implementation has been inconsistent across regions, and there is a lack of trained personnel to interpret the data outputs effectively.

The third project, carried out in Tashkent in collaboration with traffic authorities, applies AI-driven video analytics to monitor congestion, detect violations, and optimize traffic signals. Data from the project show a 12% improvement in average commute time in pilot areas. However, the system requires high-quality data feeds and stable connectivity, both of which remain challenges in peripheral districts.

On a broader level, the interviews and document analysis revealed several recurring themes:

1. **Institutional Readiness:** While ministries are eager to adopt AI tools, many lack internal data science expertise and rely heavily on external vendors. There is also little inter-agency collaboration, which leads to fragmented AI initiatives rather than an integrated national strategy.
2. **Legal and Ethical Concerns:** Uzbekistan does not yet have a comprehensive legal framework for AI governance. There are no clear policies on algorithmic accountability, data privacy, or AI ethics. This poses risks for public trust and data security.
3. **Digital Divide:** Although internet penetration in urban areas is high, rural regions still face connectivity issues. This gap threatens to create unequal access to AI-driven services and may marginalize vulnerable populations.
4. **Capacity Building:** There is a significant shortage of AI professionals in Uzbekistan. While universities have begun offering data science programs, the current pipeline is insufficient to meet national

needs. Training programs for public officials are also minimal.

Discussion

The findings suggest that Uzbekistan is at a crucial juncture in its digital governance journey. The initial forays into AI applications demonstrate the potential to reduce bureaucratic inefficiencies, increase citizen satisfaction, and improve decision-making. However, scaling these successes requires systemic reforms in policy, capacity, and infrastructure.

Institutionally, there is an urgent need for a centralized AI task force or agency that can coordinate between ministries, set standards, and monitor the ethical deployment of AI tools. Such a body could also serve as a bridge between government, academia, and the private sector, facilitating knowledge exchange and innovation.

From a legal standpoint, Uzbekistan must develop a robust framework that addresses the ethical use of AI. This includes guidelines on data ownership, algorithmic transparency, and the right to contest AI-generated decisions. International cooperation with AI-leading nations could help in drafting such regulations.

Technologically, building AI-friendly infrastructure is vital. This includes expanding high-speed internet access to rural areas, developing local language AI datasets, and investing in high-performance computing capabilities. Encouraging local startups to participate in public sector innovation through open tenders and sandbox programs can also accelerate progress.

Capacity building is perhaps the most critical area. Without a skilled workforce, the promise of AI cannot be realized. Uzbekistan should prioritize STEM education, sponsor AI research, and offer training programs tailored to public sector needs. Digital literacy campaigns can also help citizens better understand and interact with AI-enabled services.

The societal impact of AI in governance should not be underestimated. Transparency, fairness, and inclusivity must guide all AI applications to avoid reinforcing existing biases or excluding marginalized groups. Public feedback mechanisms, citizen education, and regular audits can ensure that technology serves the people, not the other way around.

Conclusion

Artificial Intelligence has the potential to revolutionize e-governance in Uzbekistan by making public services more responsive, efficient, and transparent. The country's early experiments with AI-driven tools in chatbots, procurement oversight, and traffic management demonstrate both feasibility and benefit. However, realizing the full potential of AI requires more than just technological deployment. It demands a comprehensive approach involving legal safeguards, institutional reforms, capacity building, and inclusive governance.

As Uzbekistan continues its digital transformation under the “Digital Uzbekistan 2030” vision, the thoughtful integration of AI will be essential. By learning from global best practices and addressing local challenges head-on, the nation can position itself as a regional leader in smart governance. Future research should continue to evaluate the long-term social, political, and economic implications of AI in governance to ensure that innovation goes hand-in-hand with accountability and equity.

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Assessment Mechanisms In Integrative Education And The Role Of Grammar In Foreign Language Teaching

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Abstract
This paper analyzes the essence of the concept of integrative education and its advantages in teaching foreign languages, especially in the context of grammar instruction. The effectiveness of assessment mechanisms and their role in identifying students' language competencies are also explored.
Keywords: Integrative education, formative assessment, summative assessment, grammar, competence, foreign language teaching.

Introduction

In modern educational systems, the integrative approach—i.e., teaching based on interdisciplinary connections—is widely used, especially in foreign language education, where it leads to high efficiency, particularly in grammar instruction. Grammar serves as the foundational pillar of a language, playing a decisive role in the development of other skills such as reading, writing, listening, and speaking. Additionally, assessment mechanisms are vital in determining the level of grammar acquisition, analyzing errors, and ensuring an individualized approach to instruction.

Integrative Education: Theoretical Foundations. Integrative education involves the harmonious teaching of multiple subjects or skills within a single learning process, fostering the holistic development of learners and applying knowledge to real-life contexts. In language learning, this might include analyzing grammatical structures through historical texts or enriching vocabulary by writing scientific articles. The connection between language and other subjects (CLIL approach) and a competence-based approach emphasize learning through practical use of language rather than studying grammar in isolation.

Advantages of the Integrative Approach in Grammar Teaching

Modern methodologies emphasize presenting grammar not as a set of abstract rules but as a tool for organizing accurate communication.

Grammar should be taught through real-life contexts: dialogues, narratives, news texts; role-play and communicative tasks; and analytical writing exercises.

Assessment Mechanisms and Their Role in Grammar Instruction

- **Formative assessment** – ongoing feedback during the learning process: mini-tests, exercises, and reflections.
- **Summative assessment** – conducted at the end of a learning period: tests, exams, and projects.

Other tools include portfolios, assessment rubrics, diagnostic tests, and automated online platforms (Quizlet, Socrative, Google Forms).

Error statistics help identify weak points; individualized learning plans can be developed; and effective communication is fostered between teachers and students.

Conclusion and Recommendations

Integrative education demonstrates high efficiency in foreign language instruction, particularly in acquiring grammar within real-life contexts. Assessment tools play a crucial role in identifying and developing students' knowledge levels. Teachers should increasingly apply context-based methods for grammar instruction and regularly use formative assessment tools to support learning progress.

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The Impact Of AI-Based Writing Assistants On Academic Writing Proficiency Among ESL Learners

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Abstract
This article presents a comprehensive analysis of the cognitive, linguistic, and ethical implications of AI-based writing assistants on academic writing proficiency among ESL learners. The article explores how AI tools influence cognitive load, learner autonomy, and feedback integration through the lens of educational psychology and second language acquisition theory. The study focuses on linguistic outcomes, including improvements in grammar, vocabulary, cohesion, and syntactic complexity, drawing on empirical research and writing analysis. It critically examines learner attitudes, ethical concerns regarding authorship and originality, and the long-term impact of AI tools on academic identity and autonomy.
Keywords: AI-assisted writing, ESL learners, academic writing proficiency, cognitive load theory, learner autonomy, ChatGPT, linguistic development, academic integrity, second language acquisition.

The integration of artificial intelligence (AI) into language learning environments is reshaping traditional approaches to writing instruction. For English as a Second Language (ESL) learners, AI-based writing assistants such as Grammarly, Quillbot, and ChatGPT offer real-time suggestions for grammar, style, and coherence. These tools are increasingly seen as not only corrective aids but also cognitive enhancers that influence how learners plan, process, and revise their writing. However, their pedagogical implications are complex and warrant a deeper examination of how AI-mediated feedback interacts with human learning processes.

Academic writing in a second language is a cognitively demanding task that requires the coordination of lexical access, syntactic control, organization of ideas, and adherence to formal writing conventions. For ESL learners, cognitive overload often leads to errors, reduced fluency, and oversimplified structures. AI writing assistants can alleviate some of this burden by offering immediate suggestions, thus enabling learners to focus on idea development rather than mechanics.

From a cognitive load theory perspective, AI tools may reduce extraneous load by automating grammar correction and vocabulary suggestions. [1] This allows more cognitive resources to be allocated to germane load, facilitating deeper engagement with content and structure. Nevertheless, the cognitive benefit is contingent on the learner’s awareness of how to interpret and apply the AI-generated feedback. Passive acceptance of corrections may lead to surface-level revisions without internalizing the rules being corrected. In such cases, cognitive development may stagnate, and dependence on the tool may grow, inhibiting autonomous language learning.

AI-generated feedback differs fundamentally from teacher feedback. While educators typically prioritize formative, personalized responses, AI tools provide standardized, rule-based suggestions. This raises important pedagogical concerns. On one hand, AI feedback is immediate, consistent, and accessible, which benefits learners who lack constant teacher support. On the other hand, it lacks contextual sensitivity,

pragmatics, and the nuance of human interpretation.

A study by Ranalli, Link, and Chukharev-Hudilainen found that students who received AI-generated writing feedback improved more in mechanical aspects (e.g., punctuation, agreement) than in higher-order aspects such as argument structure and clarity. [2] This distinction reinforces the pedagogical argument that AI can complement, but not replace, human instruction. Educators must therefore design writing activities that incorporate AI tools in ways that foster critical engagement with the suggestions, such as asking learners to justify or explain changes made with AI assistance. Furthermore, integrating AI into pedagogy requires rethinking assessment practices. If learners are regularly producing writing with AI support, teachers need to distinguish between assisted output and authentic, unassisted proficiency. Thus, process-oriented assessments, writing journals, or in-class timed writing tasks may better capture students' independent skills.

A central question in AI-assisted ESL writing is whether these tools promote learner autonomy or inadvertently create over-reliance. Autonomous learning is a key goal in second language acquisition, involving self-regulation, strategic thinking, and reflection. When used strategically, AI tools can indeed empower students to self-edit, explore alternatives, and notice patterns in their errors – key components of self-directed learning. AI-based writing assistants present both opportunities and challenges for ESL learners and educators. Cognitively, they can reduce surface-level burdens and support the writing process; pedagogically, they can extend feedback availability and learner agency. However, without guided usage and critical literacy, these tools risk becoming digital crutches rather than stepping stones to linguistic competence. The challenge for educators is to design writing instruction that integrates AI tools in a way that enhances cognitive engagement, builds autonomy, and respects the developmental trajectory of ESL writing proficiency.

The emergence of AI-powered writing tools has not only altered the writing process but also raised essential questions about their influence on the linguistic development of ESL learners. While much attention has been given to the functional benefits of these tools, such as error correction and vocabulary enhancement, their actual effect on the language proficiency of learners requires critical investigation. One of the most evident outcomes of AI-assisted writing is the enhancement of grammatical accuracy. Tools like Grammarly and Quillbot excel at identifying and correcting issues related to subject-verb agreement, punctuation, article use, and verb tense. [3] ESL learners often struggle with these "surface-level" elements due to cross-linguistic interference or incomplete acquisition of L2 grammar systems.

AI writing tools also support learners in expanding and diversifying their lexical resources. Many tools offer synonym suggestions, paraphrasing functions, and vocabulary enhancement features, which can expose learners to more advanced or contextually appropriate word choices. This exposure can contribute to lexical variety and sophistication – key indicators of academic writing proficiency.

Beyond word and sentence-level improvements, AI tools can contribute to textual cohesion and logical flow. Some advanced platforms suggest transitions, improve paragraph structure, or even reorganize content for clarity. These features align well with the academic conventions expected in essays, reports, and research papers. In particular, ESL learners benefit from AI feedback on discourse markers, such as transitions ("however," "in addition," "on the other hand") and cohesive devices (pronouns, connectors, and referential phrases). When these tools suggest more coherent ways to link ideas, learners gain a model of well-structured academic discourse.

Syntactic complexity – defined by the use of varied sentence structures, subordinate clauses, passive constructions, and advanced punctuation – is a hallmark of proficient academic writing. AI writing tools can both support and limit syntactic development. On one hand, tools like ChatGPT can model sophisticated syntax, exposing learners to complex sentence forms and encouraging their imitation. When learners use AI to rewrite their drafts, they often receive restructured versions with clearer logic and improved syntax. This modeling effect can serve as a linguistic input enhancer. On the other hand, AI tools may simplify learners' original complex sentences to improve clarity, leading to syntactic simplification. While clarity is crucial, excessive simplification can deprive learners of opportunities to experiment with and master advanced structures. Therefore, AI's effect on syntax is dual-edged –it can either develop or flatten learner expression depending on how it's used. [4] Despite promising short-term improvements, the longitudinal impact of AI use on actual language acquisition remains uncertain. If learners rely on AI for every writing task, they may not develop the mental representations necessary for fluent, independent language production.

The long-term influence of AI on ESL learners is still unfolding, but key concerns center on its effect on independent writing ability and the development of a personal academic voice. When learners rely heavily on AI to correct or generate their writing, they risk losing the opportunity to learn from mistakes. The process of grappling with word choice, structuring ideas, and formulating arguments is essential for internalizing the rhetorical and linguistic strategies needed in academic writing. [6] AI-based tools also tend to produce writing in a neutral, generalized tone, which can dilute the learner's individual voice. Over time, students may begin to conform to the AI's "style," suppressing cultural nuance, creativity, and rhetorical diversity – elements that enrich academic discourse. This can be particularly problematic for ESL writers, whose linguistic and cultural perspectives offer unique contributions to global scholarship.

On a broader level, the integration of AI into writing may reshape the identity of the learner from an active creator to a passive editor. If students begin to see writing not as a process of intellectual discovery but as a task to be optimized and automated, the intrinsic value of writing as a mode of thinking, reflection, and self-expression may be lost. To balance the benefits of AI tools with ethical and developmental concerns, educators and institutions should consider the following strategies:

- Transparency and disclosure: Encourage students to indicate when and how AI tools were used in their writing process.
- Critical AI literacy: Integrate instruction on how AI works, its limitations, and how to critically assess its suggestions.
- Reflection-based assignments: Ask students to reflect on the changes made with AI and justify or reject them, promoting awareness.
- Process-oriented assessment: Evaluate drafts, peer feedback, and revisions rather than just final submissions.
- Cultural sensitivity training: Teach students to recognize when AI-generated suggestions may conflict with cultural tone or context.

These practices foster not only responsible tool usage but also autonomous academic identity, preparing learners for ethical participation in academic and professional communities.

The rise of AI-based writing assistants presents ESL learners with unprecedented opportunities and dilemmas. While these tools can enhance confidence and surface-level writing quality, they also raise fundamental concerns about authorship, originality, and long-term development. Learners' attitudes are generally positive, but without guided usage, there is a risk of

dependency and ethical missteps. To ensure that AI acts as a stepping stone rather than a shortcut, educators must cultivate reflective, critical, and ethical use of AI within writing pedagogy. In doing so, we empower ESL learners not only to write better but to think more deeply about what it means to write.

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The Image Of The Mother In Zulfiya's Work

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Abstract
In her works, the poetess Zulfiya depicts the image of the mother not only as a woman's social and spiritual role, but also as a symbol of national and spiritual values, pride and patriotism. Accordingly, the article examines the formation of the image of the mother in Zulfiya's works, its didactic and artistic aspects, as well as the educational significance of this image for students.
Keywords: Zulfiya, image of the mother, literature, poetess, female images, spirituality, national values, patriotism, didactics, literary analysis, educational education.

INTRODUCTION

Zulfiya, as one of the most experienced in Uzbek literature, is known for her unique poetic style, deep humanistic philosophy. Her poetic legacy has created a unique school of artistic thought, and she has widely depicted the image of the mother in her works. In Zulfiya's poetry, the image of the mother is manifested not only as a symbol of love, devotion and care inherent in the female race, but also as an educational factor that strengthens national-spiritual values, patriotic ideas and the moral foundations of society. Scientific (Rahimova, 2017; Saidova, 2019) shows that in her work, Zulfiya creatively expresses such important ideas as the glorification of human qualities, the honor of femininity, and the incomparable role of motherhood for the development of society. Therefore, the image of the mother in the poetess's works serves to develop the artistic and aesthetic taste of students, combined with personal education, and also the development of their socio-moral consciousness. In this, the effective control of traditional folk melodies and national linguistic resources in Zulfiya's poetics also plays an important role. In the poetess's image system, the image of the mother is reflected as a symbol of national kindness, loyalty, patience, educational culture, but also as a symbol of social and just relations in society.

In addition, in Zulfiya's work, maternal feelings are sung in harmony with the rich cultural heritage of the nation and patriotic ideals. This unique poetic style not only educates students' aesthetic taste, but also has pedagogical and methodological significance in instilling in them an awareness of national identity, a deep perception of goodness and beauty in life, and a sense of social responsibility. In this regard, the study of Zulfiya's works is one of the urgent tasks of school literature education, because this process helps to firmly establish such important values as goodness, patriotism, justice, and self-awareness in the hearts of young people.

Thus, by studying Zulfiya's works, the student not only develops artistic thinking skills, but also, through their educational value, forms the ability to determine their own life principles, develop their own moral and aesthetic qualities, and understand their place in society. In this regard, an in-depth study of the poet's work is an important pedagogical resource that serves the development of students as individuals and their maturation as spiritually and morally perfect people.

METHODOLOGY

In Zulfiya's work, the images of mother and woman have acquired a deep artistic and aesthetic content, and the process of studying them is one of the important directions of educational methodology. In the poetess's poems and epics, the image of the mother is especially glorified as the sacred foundation of life, a factor

determining a person's moral upbringing, spiritual elevation, and place in society. A deep analysis of this image serves to develop in students such qualities as awareness of national identity, humanity, kindness, patience, and conscientiousness. In this regard, the methodology of teaching Zulfiya's works appears as a didactic tool that deeply affects the student's heart socially, morally, and aesthetically.

The image of the mother in Zulfiya's poetry is not just a symbol of the female race, but also has great importance as a symbol of the ideas of the Motherland, people, nation, and social development. Therefore, if in the process of teaching the poet's works, the teacher uses methods based on text analysis, comparison, deep penetration into the world of images, discussion, and interpretation, it will be possible to expand the students' understanding of historical memory, cultural heritage, and social duty. At the same time, the issues of instilling the idea of patriotism, self-awareness, a sense of social responsibility, and the formation of a worthy member of society also become important components of the educational process.

From a didactic point of view, methods aimed at developing students' artistic thinking in teaching Zulfiya's works are very effective - creative writing exercises, analysis of poems, comparison of image systems, practical tasks that encourage students to independent research. Thus, the student, while enjoying the poetic language of the poetess, understands the aesthetic power of symbols and metaphors in the work, and perceives their inner meaning more deeply. This process develops students' artistic taste, expands their vocabulary, and strengthens their critical observation skills. Also, special attention is paid to the educational aspect of education in the process of studying Zulfiya's works. The ideas of kindness, humanity, selflessness, mutual respect in family and society, loyalty, and social justice in the poetess's works broaden students' worldview and help form their personal positions in life. At the same time, the poet's verses, imbued with the spirit of patriotism, awaken in readers responsible qualities such as love for the motherland, raising national pride, and striving to make a worthy contribution to the development of society.

Thus, in the methodology of studying Zulfiya's works, it is very important to combine artistic analysis, interpretation, debate, comparison, written and oral exercises, as well as take into account the individual characteristics of young students. On this basis, the process of introducing the poetess's artistic heritage serves as an important didactic tool that gives aesthetic pleasure, morally educates, and develops students in the spirit of patriotism.

RESULT

A deep analysis of the images of the mother in Zulfiya's work shows that the images of the mother occupy one of the central places in the poetess's artistic heritage. These images, on the one hand, are an artistic expression of traditional folk values - such qualities as kindness, selflessness, and patience, and on the other hand, they are manifested as the main factor of spiritual development. By idealizing the image of the mother in her works, Zulfiya depicts her not only as a biological being, but also as an educational symbol that forms the basis for the moral and spiritual development of the individual. Therefore, the poet's work also has great didactic significance in terms of education.

The elevation of the image of the mother to such a high status in Zulfiya's poetics undoubtedly goes back to the deep roots of the mentality of the people, the cultural and moral heritage, and the Uzbek literary traditions. The poetess presents the image of the mother not only as a person who gives life, but also as a support that conveys vital values to the future generation, serving to determine the place of the individual in society. Zulfiya creates the image of the mother in the form of a deep psychological portrait, imbuing her with such universal human qualities as love, patience, devotion

to her children, forgiveness, courage, sincerity. Thus, the mother becomes a bright symbol of goodness, enlightenment, and socio-moral culture in the poetess's works. In addition, the artistic interpretation of the image of the mother also reveals the specific stylistic aspects of Zulfiya's work. The image of the mother, with its vivid expression in artistic symbols, similes, metaphors and poetic imagery, deeply affects the reader's heart, awakens aesthetic pleasure. In this process, students get acquainted with the poet's creative laboratory, understand the emotional power of poetic speech. Therefore, in the process of studying Zulfiya's works, students both expand their artistic thinking and are morally and spiritually educated, and learn to perceive life values more deeply.

At the same time, it should be noted that a comprehensive analysis of the image of the mother in Zulfiya's poetry serves to provide students with a deeper understanding of the literary heritage, enrich their personal experiences, and strengthen moral values. In this regard, the application of the poet's artistic heritage to the educational process is a very important didactic and methodological tool in students' striving for perfection as individuals, instilling such qualities as strong faith, patriotism, humanism, and social responsibility.

DISCUSSION

Zulfiya interprets the image of the mother in her works in a socially broad sense. In the poet's poetics, the image of the mother is not just a symbol of family love, but also appears as a person who strengthens the foundations of society, ensures the continuity of national values, and is an important support for social development. In her works, she gives the image of the mother a special artistic and aesthetic value, describing the mother as the most important person in the process of social development. The mother in Zulfiya's poetry is an artistic image that embodies high ideals as a symbol of the Uzbek people's centuries-old customs, cultural heritage, and moral traditions that they pass on to future generations.

In particular, in the poet's poem "To Mother", the role of the mother in society is reflected in a very deep social and pedagogical context. Through this work, Zulfiya draws the attention of readers to the importance of the mother's responsibility for social justice, maintaining peace and tranquility in society, ensuring the strength of family ties, and the moral upbringing of children. In this regard, the poet's mother's image is a means of promoting universal human values such as kindness, sincerity, forgiveness, patience, and justice, and gives readers both aesthetic pleasure and a deep moral lesson.

Artistic analysis shows that the mother in Zulfiya's work is a symbol of kindness, support, and care not only for her children, but also for all people in society. Therefore, in the process of studying the poetic heritage of the poetess, the teacher manages to introduce students to such socio-moral norms as the strength of family ties, mutual respect and responsibility. Pedagogical research (Rahimova, 2017; Sattorov, 2019) shows that such an artistic and educational impact enriches the spiritual world of students, directs them to understand their place and duties in society. Thus, the image of the mother in Zulfiya's works appears as an important tool that instills in students the highest qualities such as loving-kindness to their loved ones, respect for the family, maintaining social justice in society, and nurturing love for the homeland. In this way, the poet's artistic creativity serves the cultural development of society and helps to strengthen high moral standards in the minds of students.

CONCLUSION

In conclusion, in-depth study of Zulfiya's work, along with the development of students' aesthetic thinking, is also important in ensuring their spiritual and moral perfection. The poet's high artistic and ideological assessment of the image of the mother encourages students to deeply

understand such human qualities as love, kindness, and loyalty to their family, society, and the Motherland. In this regard, in the process of studying Zulfiya's works, teachers should strive to convey the poet's artistic world and educational views in a simple, consistent, and systematic manner appropriate to the students' age.

This experience shows that the introduction of Zulfiya's heritage into the modern educational process not only enriches the history of Uzbek literature, but also educates our youth on the basis of deep cultural roots, cultivates a unique artistic taste and helps them form independent individuals in the future. At the same time, through the poetic work of the poetess, important values \u200b\u200bin the minds of students - social responsibility, patriotism, justice, and mutual respect. Thus, studying Zulfiya's works is not only a process that gives students artistic pleasure, but also an important factor in striving for noble goals in life, understanding their place in society, and achieving moral perfection as a person. Therefore, deep mastery of Zulfiya's heritage should be recognized as one of the main tasks of modern education.

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Improving Energy Efficiency In Food Production With Real-Time Data Management

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Abstract
Rising energy demand and prices are significant challenges for the energy-intensive food sector throughout the supply chain. Thus, improving energy efficiency has become an important priority for the food sector. However, most food businesses have limited awareness of the latest technological advances in real-time energy monitoring. The concept of "Internet of Things" (IoT) is used in production enterprises of developed countries around the world to obtain energy data in real time. The Internet of Things has been explored to increase visibility, transparency and awareness of different levels of energy use. This article provides analysis and suggestions for achieving energy efficiency through real-time data collection in food production and processing enterprises. An example of a beverage plant in food processing and processing enterprises is given, where energy consumption reduction measures have been developed by introducing sensor technology that supports the Internet of Things, based on the product energy model.
Key words. Food production, energy efficiency, energy saving, real time, intelligent devices, efficient lighting solutions, heating and cooling, energy saving, energy used per unit of product, improving the efficiency of equipment use, reducing waste.

Most of the current solutions available on the market are primarily designed for large enterprises. Due to their high costs and the need for customization by specialized personnel, they are considered inconvenient for small and medium-sized businesses and individual building owners. The main objective of this study is to eliminate these limitations by developing an IoT-based energy management platform that is comprehensive in functionality, economically viable, and user-friendly.

This research integrates sensors, software, hardware models, decision-making algorithms, actuators, and a structured knowledge base. It enables data exchange and system control via the Internet and cloud technologies. The system was tested in three real-life scenarios, aimed at shaping an advanced energy management model.

The first experiment focused on optimizing a ventilation system, where IoT sensors monitored temperature, pressure differences, and airflow. Artificial neural networks were employed to predict system behavior under various conditions. A genetic algorithm was used to identify optimal operational conditions. This approach reduced annual ventilation energy consumption by 20% and weekend energy use by 60% [1].

The second experiment involved optimizing the compressed air system pressure. Key energy efficiency issues such as air leaks, heat losses, and pressure drops were targeted. Real-time monitoring of pressure, flow, and energy consumption was conducted using IoT sensors and analyzed via machine learning models. As a result, reducing air pressure by just 1 bar led to a 7% energy saving.

The third experiment aimed at detecting unnecessary air usage. Here, the k-means clustering algorithm was used to differentiate between normal and abnormal operation modes. Unexpected air consumption during non-working hours was identified using histograms and heat maps. This optimization resulted in weekly savings of 393 kWh, equivalent to 10% of the compressor's weekly energy usage.

The key innovation of this research lies in the integration of IoT systems with modeling intelligence, enabling real-time energy management, improving efficiency, and facilitating continuous optimization of operational processes. The findings show that advanced IoT platforms can offer energy-saving and economically feasible innovative solutions for small and medium enterprises.

Global electricity demand has grown steadily by approximately 4% annually over the last decade. Industrial and building infrastructures are the largest consumers. According to the International Energy Agency (IEA), the industrial sector accounts for 42.3% of global electricity consumption. Hence, improving energy efficiency is a global priority, and analyzing factors influencing energy use in production processes is of paramount importance [2,3]. The ISO 50001 international standard is tailored for industrial, commercial, and institutional users to enhance energy efficiency. It defines strategies for demand-based energy management. Traditional approaches like deploying energy-saving technologies, financial incentives, consumer education, and regulatory measures have yielded results. However, in recent years, the Demand Response (DR) concept has emerged. This system promotes the active integration of consumers into the power supply, real-time control of energy use, and load reduction in power grids.

Originally, DR programs were introduced for large industrial and commercial enterprises due to their high energy usage and availability of remote-control infrastructure. Now, with the development of smart grids, these programs are extending to private consumers as well. For DR strategies to be effective, all consumers must have well-functioning energy management systems. Managing energy use in manufacturing facilities is complex and influenced by weather, work schedules, equipment conditions, malfunctions, and planning factors [4].

Currently available commercial energy management systems are primarily tailored for large organizations with greater financial capacity and dedicated energy managers. Thus, developing simple and efficient energy management systems for SMEs is crucial.

Low energy efficiency remains a pressing issue for small and medium-sized enterprises (SMEs), which face several barriers:

1. Lack of appropriate tools to identify energy-saving opportunities:
✓ Energy losses often stem from malfunctioning or inefficient equipment,
✓ Improperly loaded systems,
✓ Poor equipment planning, which causes excessive demand,
✓ System faults and leaks causing major energy losses. Often these issues are hidden and difficult to detect.
2. Lack of sufficient evidence to address identified issues:
✓ Even when problems are found, they may not be prioritized,
✓ Enterprise managers often focus on production processes and lack clear insight into the financial benefits of energy-saving measures,
✓ Therefore, such issues are postponed or neglected.
3. Ineffective analysis of data collected from sensors:
✓ While many enterprises have sensors, the collected data is underutilized in decision-making,
✓ Such valuable data, if analyzed properly, could guide energy-saving decisions.

Several commercial energy management tools have been developed by companies such as SAP, Schneider Electric, EnergyCAP, CA Technologies, and JouleX. However, these tools are complex, require substantial customization, and necessitate specialized training. Local monitoring tools like ABB's motor monitoring system or Air Technologies' MonitAIR® also exist, but are not integrated into the overall factory energy management strategy [5,7].

Key obstacles include:

✓ Sensors and energy management tools are not interconnected, requiring manual data collection and input,
✓ Forecast models exist for specific energy consumers, but they are not aligned with the overall plant strategy,
✓ Current cloud-based management strategies lack decision-making mechanisms,
✓ Demand-based energy management (DR) is ineffective due to unaccounted real-time and random factors (e.g., weather),
✓ Reliable investment proposals for energy efficiency improvements are lacking, and SMEs lack specialized personnel to develop such solutions,
✓ There is no clear roadmap for future energy efficiency improvements.

Modern technologies—IoT, SCADA, MATLAB, PLC, and AI—enable real-time monitoring, remote control, optimal load forecasting, automatic reactive power management, and efficient energy distribution. These can reduce energy consumption by 15–25% [6,9].

IoT technologies continuously monitor real-time parameters like temperature, pressure, load, and operational time for each device. SCADA systems enable centralized control of energy flows, allowing real-time visualization, signaling, and historical analysis of technological blocks. MATLAB/Simulink provides a robust scientific platform for multi-parameter mathematical modeling and optimization, including energy balances, load variations, and predictive models for temperature-pressure coefficients. PLC (Programmable Logic Controller) technology automates energy control in production lines, optimizing device operation stages and load balancing. AI algorithms enable forecasting of energy consumption, fault prediction, and continuous system operation [10].

This study is being conducted at “Qo‘qon Oziq-Ovqat Invest” LLC. Based on the energy audit carried out in January 2025, the enterprise’s energy consumption is as follows:

✓ Annual average electricity consumption – 617,284 kWh
✓ Major consumption zones – pumps, steam boilers, compressors
✓ Energy efficiency index – 62%
✓ Energy loss rate – 38%

According to 2024 studies of Uzbekistan’s food industry, 65–75% of facilities experience thermal energy losses, especially from outdated boilers and steam lines. Electrical losses stem from high reactive power ($\cos\varphi < 0.85$) and worn-out motors.

At “Qo‘qon Oziq-Ovqat Invest” LLC, the 2023 audit showed that discrepancies between temperature, pressure, load, and electrical power led to a 37% decrease in energy efficiency.

The major types of energy losses in the food industry are listed in Table 1.

Table 1

Loss Type	Definition	Main Causes
Heat Loss	Heat escaping into the environment during boiler, drying, or cooking processes.	Poor insulation; outdated equipment
Electrical Loss	Active and reactive energy losses in electrical networks.	High resistance; low power factor (cos φ)
Mechanical Loss	Frictional losses in pumps, compressors, and motors.	Lack of proper lubrication; operational errors
Pneumatic Loss	Loss due to air leakage or incorrect distribution in compressed-air systems.	Air leakage; excessive pressure
Hydraulic Loss	Pressure drops in water and steam pipes.	Unbalanced networks; bottlenecks
Idle Running	Equipment operating without load.	Lack of automation

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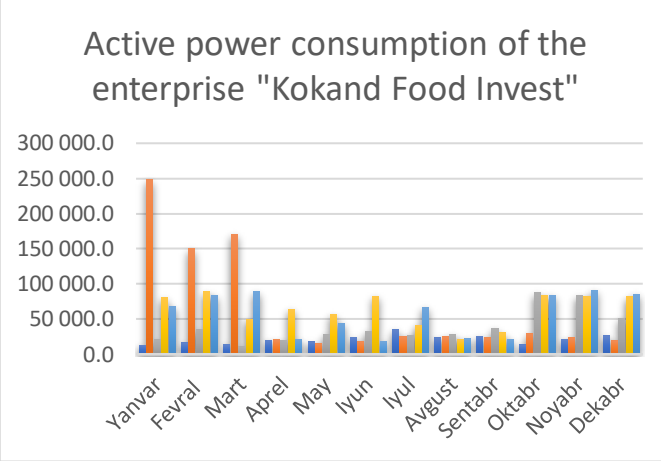

Figure 1. Dynamics of active power consumption of the enterprise

From the dynamics of the enterprise's active power consumption during 2020-2024, the highest energy consumption was observed in January 2021, which indicates a 32% increase compared to the lowest 5-year energy consumption indicator (770,420 kWh).

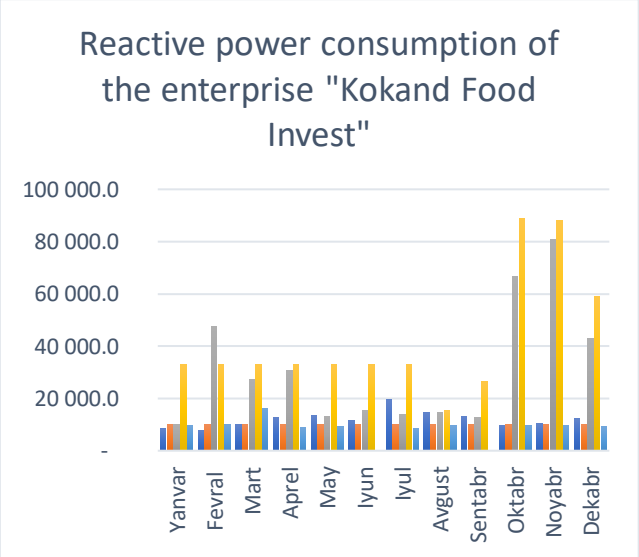

Figure 2. Dynamics of reactive power consumption of the enterprise

The diagram above shows that the largest amount of reactive power was consumed by month in 2023 at the production plant of the “Kokand Ozgot-Ovqat Invest”.

Percentage expression of energy consumption by production stage at the Kokand Ozgot-Ovqat Invest LLC oil and fat plant.

1. Pressing – 29.7%. The highest energy consumption occurs during the pressing stage. The oil extraction process from cottonseed is carried out under high pressure, which requires the use of powerful electromechanical presses, hydraulic systems, and motors. This stage can be optimized through real-time load monitoring via SCADA, detection of pressing vibrations, and optimization through PID regulators.
2. Roasting – 22.8%. A large amount of thermal energy is required to raise the temperature to 100–140°C. Gas or electric boilers are used; therefore, thermographic control of heat losses is essential. IoT temperature sensors and an AI model for controlling steam consumption should be implemented.
3. Extraction – 20.2%. The process of extracting the remaining oil from cottonseed using a solvent (hexane) is energy-intensive. The cooling and evaporation processes consume a large amount of steam and electricity. An AI-based model that forecasts steam consumption should be developed to optimize the energy balance.
4. Refining – 9.1%. At this stage, insoluble impurities and acidic compounds are removed from the oil. Heating, mixing, and operation of pumps. Monitor pump loads and automatically manage load balancing through inverters.
5. Deodorization – 6.1%. Odors are removed using heat. A constant temperature of 180–220°C must be maintained, indicating high energy consumption. PID control, temperature sensors, and a steam distribution algorithm.
6. Separation – 3.7%. Solids are separated from the oil. Pumps and separators consume energy. Pump load can be optimized through vibration sensors.

7–10. Packaging, Auxiliary Equipment, Receiving (3.4%, 3.4%, 1.7%). These are relatively low-energy consumption stages. Their combined energy consumption is approximately 8.5%, resulting from lighting, motion sensors, and air compressors. In lighting systems, use LED lamps, motion sensors, and control ventilation loads via SCADA.

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The energy performance indicators of food production enterprises are described based on mathematical modeling using the example of "Qo'qon Oziq-Ovqat Invest" LLC.

The purpose of the modeling is to develop mathematical formulas that express the relationship between energy consumption, losses, and production efficiency. This, in turn, creates opportunities for real-time monitoring and optimization.

1. Main energy indicators:

✓ W – Annual electricity consumption (kWh)

✓ Q – Annual thermal energy consumption (Gcal)

✓ P_{inst} – Total installed capacity (kW)

✓ P_{avg} –Average loaded capacity (kW)

✓ η – Efficiency coefficient

✓ $k_z = \frac{P_{avg}}{P_{inst}}$ – Load factor

✓ $C_{sp} = \frac{W}{V_{prod}}$ – Specific energy consumption per unit of production

2. General Mathematical Representation of the Energy Balance:

The energy balance can be expressed with the following equation:

$$W_{input} = W_{prod} + W_{loss} + W_{aux} \quad (1)$$

Where:

✓W_{input}– Total incoming energy (kWh or Gcal);

✓W_{prod} – Energy directly used for production;

✓W_{loss} – Energy losses (thermal and electrical), such as insulation, transformation, and motor efficiency losses;

✓W_{aux} – Energy for auxiliary systems (lighting, ventilation, compressed air, pumps).

Losses are calculated as follows:

$$W_{loss} = W_{elecloss} + W_{heatloss} + W_{mechloss} \quad (2)$$

3.Mathematical Model of Load Fluctuations:

To forecast load fluctuations using AI, the following model is applied:

$$P(t) = a_0 + a_1 \cdot \sin(\omega t) + a_2 \cdot \cos(\omega t) + a_3 \cdot T(t) + a_4 \cdot \Delta p(t) + \varepsilon(t) \quad (3)$$

Where:

✓$P(t)$ – Power consumption at time t;

✓T –Temperature;

✓$\Delta p(t)$– Pressure fluctuation;

✓ω– Frequency of load fluctuation;

✓$\varepsilon(t)$ – Prediction error in the AI model.

This model operates based on real-time sensor data built on the MATLAB/Simulink platform.

4. Energy Consumption and Efficiency Index per Product Unit:

The energy efficiency indicators relative to the volume of produced goods are described as follows:

$$ESI = \frac{W}{V_{prod}} \cdot \frac{1}{\eta} \quad (4)$$

This index reflects the energy consumption per unit of product and technological efficiency. A separate ESI value is calculated for each technological stage.

5. Heat Loss Calculation Formula (through pipelines):

$$q = \lambda \cdot \frac{T_{int} - T_{ext}}{\delta} \cdot A \cdot t \quad (5)$$

Where:

✓ λ – Thermal conductivity coefficient (material-dependent);

✓ $T_{int} - T_{ext}$ –Internal and external temperatures (°C);

✓ δ – Insulation thickness (m);

✓ A – Surface area (m²);

✓ t – Time (hours).

This formula is used to determine heat losses in thermal pipelines, and to optimize them, an AI-based insulation control algorithm integrated with a PID controller is developed.

6. AI-Based Automatic Control Model:The automatic control model using Artificial Intelligence operates in the following sequence:

1.Real-time data is collected via sensors.

2.The AI module forecasts load and efficiency using regression or neural network models.

3.A continuous control signal is sent via the PLC/SCADA system.

4.Each device (pump, motor, boiler) operates in accordance with its optimal mode.

7. Complex Integrated Mathematical Model:The generalized model representing energy efficiency is proposed as:

$$EFF_{\text{total}} = \frac{\sum_{i=1}^{n} (\eta_i \cdot P_{\text{useful}_i})}{\sum_{i=1}^{n} P_{\text{input}_i}}$$

(6)

This model calculates energy efficiency based on the useful power (P_{useful}) and the total input energy (P_{input}) for each technological stage. Using this model, the overall efficiency of the production process is evaluated in a mathematically grounded manner.

The plant's electrical, thermal, compressed air, and auxiliary energy systems are interconnected and form a complex structure. The main load is represented by technological lines that cover the stages of oil and fat production: pressing, roasting, extraction, refining, deodorization, separation, and packaging.

Model algorithms are developed based on the Newton-Raphson iterative method and Taylor series**.** In real-time, the following parameters are transmitted by IoT devices:

✓ Electric current and voltage: I(t),U(t)
✓ Load and rotational speed: E(t),n(t)
✓ Temperature: T(t)
✓ Pressure and steam flow rate: p(t),q(t)

The total energy flow is calculated as:

$$E(t) = U(t) \cdot I(t)$$

(7)

Mathematical Model – Newton-Raphson Iteration Structure:

Assume the energy balance equation in its initial state is given by:

$$f(E) = E(t) - \eta \cdot E_{\text{max}} = 0$$

(8)

Where η is the efficiency coefficient. This equation is solved by the Newton-Raphson method using the following iteration:

$$E_{n+1} = E_n - \frac{f(E_n)}{f'(E_n)}$$

(9)

If, $f(E) = E - \eta \cdot E_{\text{max}}$, than $f'(E) = 1$, thus:

$$E_{n+1} = \eta \cdot E_{\text{max}}$$

(10)

This means that with each iteration, the system approaches optimal power.

Prediction Based on Taylor Series for Temperature, Pressure, and Load: The forecast model for energy consumption in relation to temperature and pressure, based on Taylor series, is given by:

$$(t + \Delta t) = E(t) + \frac{dE}{dT} \cdot \Delta T + \frac{dE}{dp} \cdot \Delta p + \frac{dE}{dL} \cdot \Delta L$$

(11)

Using this model, the system is updated every 1–5 seconds, and the control algorithm adapts the system in an energy-efficient direction.

Comprehensive Energy Efficiency:

$$EFF_{\text{total}} = \frac{\sum_{i=1}^{n} (\eta_i \cdot P_{\text{useful}_i})}{\sum_{i=1}^{n} P_{\text{input}_i}}$$

(12)

This model offers the following advantages:

✓ Control based on new data every 1 second
✓ Automatic optimization of both reactive and active power
✓ Energy efficiency improvement of up to 20–30%
✓ Real load balancing in pumps, steam systems, fans, and motors

This mathematical model, developed based on Newton-Raphson and Taylor methods, enables forecasting, optimization, and real-time control of energy flows using real-time data collected through IoT sensors. The model is practically implemented by integrating it into MATLAB/Simulink, PLC, and SCADA systems. For "Qo'qon Invest" LLC, this approach allows for the development of a highly efficient AI-predictive control mechanism.

Conclusion:In general, real-time energy data collection enables enterprises to make data-driven decisions, increase operational efficiency, reduce costs, minimize risks, and contribute to sustainability goals. Given the increasing demand and cost of energy, this is a pressing issue for the food sector, which consumes large amounts of energy throughout the energy supply chain. Therefore, improving energy efficiency has become a crucial priority for the food industry.

In real-time data collection, the Internet of Things (IoT) is studied as a tool to enhance

visibility, transparency, and awareness regarding various levels of energy consumption.

The proposed "General Model of Food Production and Processing Enterprises Based on the Internet of Things (IoT)" mainly consists of energy-consuming equipment (motors, heating, cooling, freezing devices, electrotechnical devices, lighting, storage, transport systems, etc.) and intelligent devices (microcontrollers, sensors, smart devices, automation equipment, smart monitoring boxes, relays, etc.). Its key distinction from similar existing models lies in the use of individually integrated intelligent modern devices that enable real-time data collection for energy consumption, control, and monitoring.

The model developed above presents the infrastructure of the Unified Energy System (UES) of food production and processing enterprises. It describes the energy consumption at various departments and equipment levels until the food product reaches its final form. The stages that involve converting raw materials into finished products (e.g., motors, compressors, and heaters) are the most energy-intensive.

Applying correct technologies for management and monitoring to reduce and optimize energy consumption at the above stages has a significant impact on improving the energy efficiency of the process.

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Analysis Of Increasing Energy Efficiency Through The Use Of IoT Technologies In Food Production

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Abstract
Rising energy demand and prices are significant challenges for the energy-intensive food sector throughout the supply chain. Thus, improving energy efficiency has become an important priority for the food sector. However, most food businesses have limited awareness of the latest technological advances in real-time energy monitoring. The concept of "Internet of Things" (IoT) is used in production enterprises of developed countries around the world to obtain energy data in real time. The Internet of Things has been explored to increase visibility, transparency and awareness of different levels of energy use. This article provides analysis and suggestions for achieving energy efficiency through real-time data collection in food production and processing enterprises. An example of a beverage plant in food processing and processing enterprises is given, where energy consumption reduction measures have been developed by introducing sensor technology that supports the Internet of Things, based on the product energy model.
Key words. Food production, energy efficiency, energy saving, real time, intelligent devices, efficient lighting solutions, heating and cooling, energy saving, energy used per unit of product, improving the efficiency of equipment use, reducing waste.

Introduction. Today, the need for energy is determined by three main factors: 1) Population growth, 2) Economic development of society, 3) Scientific and technical level of production in technological processes. In the world, these needs are increasing year by year and by 2022 will exceed 10 billion tons of oil equivalent per year. Along with the increase in the world's population, the volume of food production and processing is also constantly growing. According to statistical data, in the last hundred years, the population of the earth has increased by 4 times, and the annual energy production has increased by 21 times. This, in turn, requires a sharp increase in the volume of food production and processing. Recent studies show that the world's food production systems - from the farms where food is grown to the processing and marketing chain - consume 30% of all available energy. Rising energy demand and prices are a pressing issue for the food sector, which consumes large amounts of energy throughout the energy supply chain. Thus, improving energy efficiency has become an important priority for the food sector.

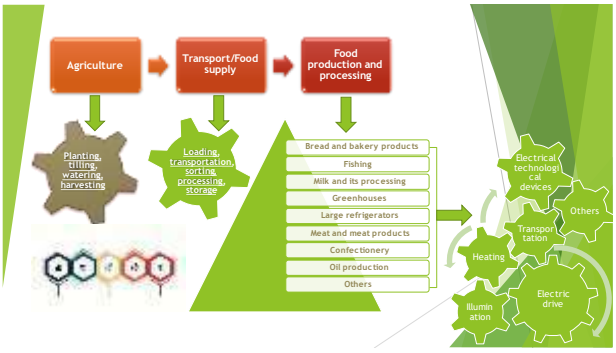

Figure 1. Energy system of food production from production to processing.

The availability of uninterrupted energy supply in the future is a cause for concern due to the depletion of fossil fuel resources and the increasing world population. According to UNESCO's 2022 report, the food production and supply chain accounts for 30% of global energy consumption, and this is mainly in four food-related activities: agriculture, transport, processing and food processing as shown in Figure 1. The threat

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of energy shortages and high energy costs is already approaching the food sector, and they need to address it urgently.

As a result of the research, the amount of energy consumed per kilogram of several food products was analyzed. In this case, the average amount of electricity and fuel energy used for processing milk and dairy products, fruits and vegetables was expressed in MJ/kg.

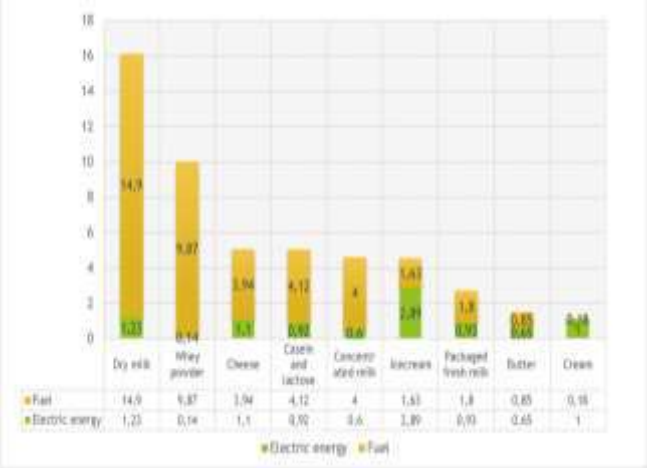
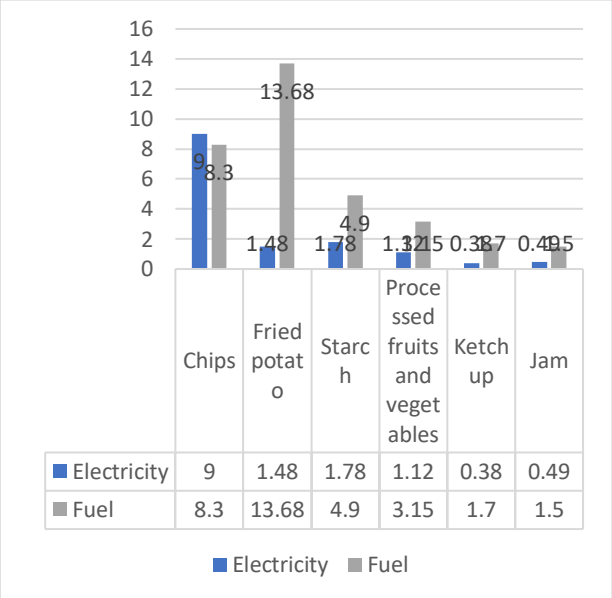


Figure 2: Average final electrical and fuel energy used for dairy production



	Chips	Fried potato	Starch	Processed fruits and vegetables	Ketchup	Jam
Electricity	9	1.48	1.78	1.12	0.38	0.49
Fuel	8.3	13.68	4.9	3.15	1.7	1.5

Figure 3: Average final electrical and fuel energy used for fruit and vegetable processing (MJ/kg product)

Some options to reduce the amount of energy used in the above food products are to reduce energy-intensive activities without affecting the profitability of the producer, or to better manage energy and recover energy. Energy management systems (EMS's) are widely implemented in the food production sector to achieve and sustain improvements in energy use. EMS is complex with various parameters such as energy production, energy import/export, energy storage, energy conversion, energy transmission and energy consumption. This situation can be further complicated by other uncertain parameters (ie, interval, probability, and probability distribution). Thus, in order to improve energy efficiency, there is a need for a system that provides a detailed breakdown of the energy consumption of their production facilities in real time.

Methods. Energy smart meters based on the Internet of Things (IoT) network of intelligent devices can provide visibility and reliability on energy consumption efficiency and productivity. It provides management with critical information on the energy consumption levels of various manufacturing facilities, thereby enabling them to make better decisions in real time to reduce overall energy consumption. This paper aims to demonstrate the application of an IoT-based smart energy system in reducing energy wastage in a beverage company. The article provides a brief overview of the technologies adopted to optimize energy consumption in food production enterprises, as well as the basis for measuring the energy of food products. The last sections present a case study of how a food manufacturing company implemented a smart energy metering system connected to an IoT system based on a product energy model to reduce annual energy consumption and thereby increase its profit margin.

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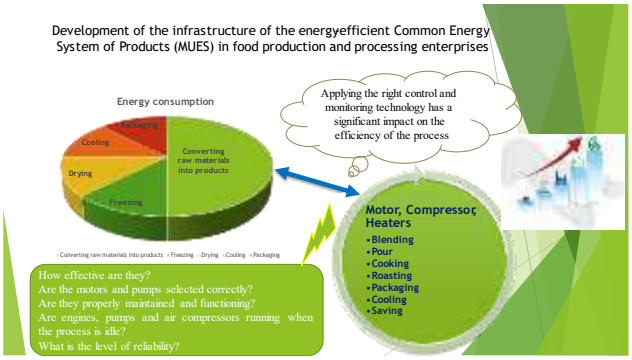


Figure 2. Infrastructure of the total energy system of energy-efficient products in food production and processing enterprises

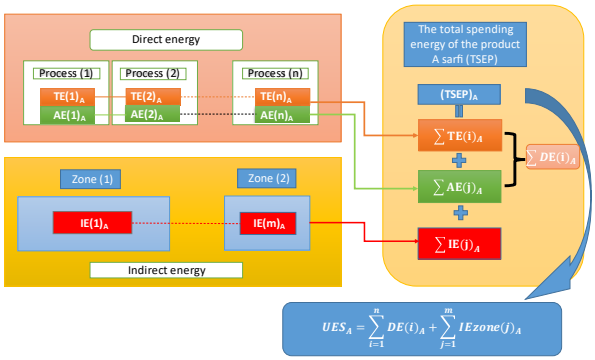


Figure 3. Total energy consumption of food products.

Advantages of real-time energy data collection:

1. Cost savings: By monitoring energy consumption in real time, businesses can identify areas of excessive energy consumption and implement targeted energy conservation measures. This can result in significant cost savings in terms of reduced energy bills.
2. Improve energy efficiency: Real-time data allows businesses to understand how energy is being used in their operations. This allows them to optimize energy consumption and identify areas where efficiency can be improved. By making decisions based on real-time data, businesses can reduce waste and improve overall energy efficiency.
3. Demand Management: Real-time data helps businesses better manage energy demand. By identifying peak usage periods and load patterns, businesses can schedule energy-intensive activities during off-peak hours to avoid costly demand charges or power outages.
4. Risk Reduction: Real-time data collection allows businesses to identify anomalies or deviations from normal energy consumption patterns. This helps identify equipment malfunctions, leaks, or other problems that could lead to costly downtime or safety hazards. By addressing these issues promptly, businesses can avoid potential risks and minimize downtime.
5. Sustainability and environmental benefits: Real-time energy data collection promotes sustainability by enabling businesses to monitor their carbon footprint and take proactive steps to reduce it. By identifying energy-intensive processes or equipment, businesses can implement energy-saving technologies or renewable energy sources to reduce environmental impact.
6. Regulatory Compliance: Real-time energy data collection provides businesses with accurate and up-to-date information on energy usage. This helps ensure compliance with energy reporting and auditing requirements imposed by regulatory bodies or industry standards.

We developed a general model of food production and processing enterprises based on the "Internet of Intelligent Devices" (Internet of Things) as a result of many analyzes during the research. In the utility model we have developed, the issue of achieving efficiency through comprehensive control and management as well as real-time data management throughout the entire production and processing network is the main essence of the utility model. With the help of the "Internet of intelligent devices" (Internet of things), in-depth analysis of data in real time, development of methods of reducing total energy consumption, development of energy-saving measures in energy supply of technological processes, improvement of energy efficiency in consumption a model of the improvement system and a detailed classification of the data of the General Energy System of Products (GESP) have

been developed. In this, through modern technologies ("Internet of things", artificial intelligence devices, digital technologies), real-time control of the total energy data spent on the entire system of food products, from planting to the finished product, and management, and through this, it is possible to make decisions aimed at efficiency.

Today, one of the main issues is the collection of data, control and application of energy-efficient technologies in the production and processing of food products. As energy costs continue to rise, food and beverage manufacturers need to gain more control over these costs to gain a competitive advantage. The key to reducing energy-related costs is to understand where, when and how much is consumed. Armed with this information, companies can proactively manage load demands, improve system performance and reduce costs. That is, it is necessary to fully consider the issues of knowing the total energy consumed per unit product, reducing wastage, and improving the quality of control and management. This, in turn, leads to a reduction in the amount of energy used per unit of production and processing of the product, ensuring quality and safety control, making energy-efficient decisions and reducing the need for human intervention. The main essence of a useful model is that it considers the issue of achieving efficiency through the entire production and processing network, comprehensive control and management, as well as real-time data collection.

A useful model task: The task of the proposed device, unlike the previous devices, is to develop ways to reduce overall energy consumption by analyzing the data using the "Internet of Intelligent Devices", and to provide energy for the technological processes of food production and processing. development of energy-saving measures, development of a system model for increasing energy efficiency in the process of food production and processing, detailed classification of general energy system data of products, development of energy consumption models.

Fulfillment of the task: The implementation of the task in the proposed model is carried out by receiving energy data in real time in enterprises based on the "Internet of Intelligent Devices" (Internet of Things) used in it. Through the use of such a model, food production and processing enterprises will have the ability to predict energy consumption, quality, control indicators, future production and failures in each section at the same time. Energy management system (EMS) is a complex structure consisting of various parameters such as energy production, energy import/export, energy storage, energy conversion, energy transmission and energy consumption. This situation can be further complicated by other uncertain parameters (ie, interval, probability, and probability distribution). Thus, in order to improve energy efficiency, there is a need for a system that provides a detailed breakdown of the energy consumption of their production facilities in real time.

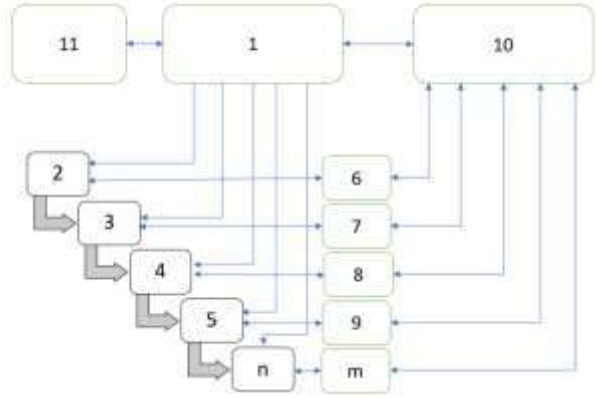
The importance of real-time data collection: Ensuring quality and safety control (For example, during the storage of products), Preventing failures (For example, monitoring the status of engines in the process at the same time and eliminating if there is a failure), Fast, energy making and managing cost-saving decisions (obtaining information about each energy user), (possibility of obtaining permanent energy audit data, determination of energy consumption, quality indicators, and energy waste values for each site), Accurate and reliable forecasting (estimation of productivity by monitoring the light, temperature, humidity and soil moisture of cultivated areas), Reducing the need for human intervention (Remote control, if sensors detect that workers are working in the enterprise, turn on the air conditioner, lighting devices, or if, if not, delete) it is possible to perform actual tasks.

Important features that characterize a useful model: Key features of the utility

model are the interconnection of energy-consuming devices in enterprises using different types of sensors, such as radio frequency identification, and actuators that work together to sense, collect and transmit, and physical and digital using utility technologies. refers to the connection between the world. Using this model, producers can track their production from the farm to the end user, which can improve food safety and can be used to collect information related to production processes, and this information can be manipulated to make better decisions about the business process model.

In our model, energy management practices focus on improving energy efficiency. Collecting and analyzing data in the model facilitates investment in technology, and through continuous operation, it can also identify inefficiencies, malfunctioning equipment, optimize the energy system and evaluate the effectiveness of technologies.

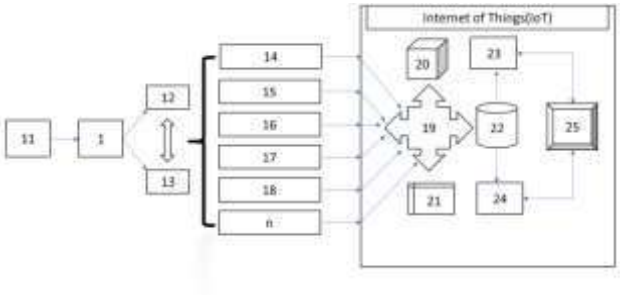
The proposed model works as follows: In food production and processing enterprises or other industrial enterprises, all energy-consuming devices are registered and divided into plots. Before that, intelligent devices performing various tasks are installed on the plots in a suitable manner and the program is installed. In this case, there is no resistance to the operation and structure of the company's devices, that is, efficiency is achieved through existing devices. Installed intelligent devices are interconnected with the Internet network, and information about each energy-consuming device (its energy parameters, quality indicators, safety and control indicators, malfunctions and operating status) is obtained. . On the basis of the collected data, optimal and cost-effective operating modes for devices are developed, workflow control schemes are created, faults are identified and methods of their elimination are shown. In this model, future plans for enterprises are developed: production forecast indicators in accordance with the level of consumption, possible failures and methods of their elimination, and several other efficiency-oriented activities. A schematic view of this process is shown in Scheme 1.



Scheme 1. General model of food production and processing enterprises based on "Internet of intelligent devices" (Internet of Things).

It can be seen from the given scheme 1 that energy comes to food production and processing enterprises in different forms from electric energy producers (11), the main reducing substation of the enterprise and a set of general energy distribution devices (1). Energy is distributed from it to all sections (2, 3, 4, 5, n).

A useful model is to increase energy efficiency through a high level of energy resource management system. In the center, there are at least two identical software and hardware systems for data processing and IoT management, each of which includes a web server and an application server, and the server has a message line, communication using IoT protocols. There is a data collection and transmission unit. Each server block is networked to each other, storage and file server, there is also an analytical block, a control block, a central data balancing block, and a message queuing control block.



Scheme 2. The structural system of the general model of food production and processing enterprises based on the "Internet of Things".

An energy calculation system is implemented in the complex of accounting for all energy consumption values, i.e. Intellectual structures (6, 7, 8, 9, m), data is managed through the 10th data management device. Figure 2 shows the main processes. Direct(12) and indirect(13) energy users are connected to the data collection device(19) using the Internet. The Internet of Things section of intelligent devices includes the Internet (20), sensor (21), data storage (22), data processing (23), data control and management (24), and computer (25).) are involved. Power monitoring, water monitoring, gas monitoring, shutdown operations, energy monitoring (Short-term, periodic, continuous modes), monitoring (Demand management, Emergency load shutdown, Compressed air management and optimization, Pump optimization solutions, Steam gas consumption reduction, waste detection) are performed. A global control center for the consumption of energy resources based on IoT technology, which includes at least two identical software and hardware systems for data processing and IoT management, data collection and storage that can scale internal data storage segments , a server designed to store data in the form of files, a data balancing unit and a message queue control unit designed for indirect information interaction of energy resource consumption management systems of complexes with intelligent devices, each The complex includes a web server and an application server connected to it, which in turn includes a message bus, a block for collection and transmission. Analytical block configured to implement the function of processing and analyzing data, energy resource consumption indicators and generating control commands through protocols of intelligent devices, control block configured to implement scenarios for control, program launch logic i, IoT request timing, interaction with databases, as well as data encryption and protection, there are blocks of each server.

Smart meters of energy in each department of production enterprises and some machines measure the corresponding energy consumption. This enabled daily real-time monitoring of direct and indirect energy use and efficiency of each facility based on the GESP model. To measure energy consumption in enterprises, smart energy meters are installed for each technological and energy-intensive equipment, such as energy consumers, heating and cooling devices, and engines. The indirect and direct energy data collected by these smart meters based on the GESP model are transmitted wirelessly to a central database, where they are stored and analyzed to obtain meaningful and actionable information. Real-time, actionable energy data is made available to all energy-related personnel in a user-friendly dashboard.

The savings interface row on the sensors in the model shows how much electricity is saved or lost for each month. This provides a high level of energy awareness that enables decision makers to make sound energy use decisions.

Furthermore, it shows how IoT-enabled energy monitoring solutions based on the GESP model are important for the food sector and should be included in plant energy management initiatives. At the same time, during the implementation of the case study, it became clear that problems such as food production stoppages, product

wastage and contamination risks can be eliminated by installing IoT devices.

Conclusion. Overall, real-time energy data collection enables businesses to make data-driven decisions, improve operational efficiency, reduce costs, mitigate risks, and contribute to sustainability goals. Rising energy demand and prices are a pressing issue for the food sector, which consumes large amounts of energy throughout the energy supply chain. Thus, improving energy efficiency has become an important priority for the food sector. The Internet of Things (IoT) has been explored to increase visibility, transparency and awareness of different levels of energy use while collecting real-time data. The proposed "General Model of Food Production and Processing Enterprises based on the Internet of Things" is mainly energy-using devices (Engines, heating, cooling, freezing devices, electrotechnological devices, lighting, storage , transport devices, etc.), consists of intelligent devices (microcontroller, sensor, smart devices and automation devices, intelligent monitoring boxes, relays, etc.), and differs from its close analogue in that it uses separate intelligent modern devices and with their help, information on energy consumption, management, control is obtained in real time.

Above, the model we have developed is the infrastructure of energy-efficient Product Common Energy System (GESP) in food production and processing enterprises. It describes the energy consumption in the departments and devices until the food products are ready. Converting raw materials to products (ie, motors, compressors, and heaters) consumes the most energy. In the above sections, the use of the right management and control technologies to reduce and optimize energy consumption has a significant impact on the energy efficiency of the process.

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Speech Problems And The Issue Of Their Classification

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Speech activity is a complex process that occurs in the interaction of cognitive, psychological, physiological and social mechanisms of a person. In this regard, the term speech disorder (rechevoye narusheniye) refers to a set of conditions characterized by a violation or functionally unhealthy state of any component of the speech process. These conditions manifest themselves in the form of deviations from normal speech development, ineffectiveness or complete speech blockade.

The concept of a speech problem from the point of view of neuropsycholinguistics is explained by disruptions in the central mechanisms that control the speech process - the central nervous system, cognitive functions, memory, attention, speech processing systems, and their interconnections. That is, a speech problem is not only a malfunction in the phonetic, morphological, or lexical components of speech, but is a verbal expression of defects in the general cognitive system of a person.

Experts describe speech problems based on several approaches:

1. **Clinical approach** – here, speech problems are studied based on specific medical diagnoses: aphasia, dysarthria, alalia, logoneurosis , etc. For example, in aphasia, a person's ability to form, understand, or use speech is impaired due to damage to the central nervous system.
2. **Psycholinguistic approach – in this approach, speech problems** arise as a result of discrepancies between a person's speech competence and speech performance. For example, a person may have knowledge of grammatical rules, but the inability to correctly apply them in practical speech is considered a speech problem.
3. **Neuropsychological approach** - in this direction, speech problems are analyzed from the point of view of the functional localization of brain activity. That is, whichever area of the brain is damaged or malfunctions, the associated speech function disorder is observed.
4. **Speech therapy-pedagogical approach** - here the speech problem is assessed in the context of educational underdevelopment, lagging behind in speech development, and difficulties in social adaptation.

Let's look at the main characteristics of speech problems (Figure 1).

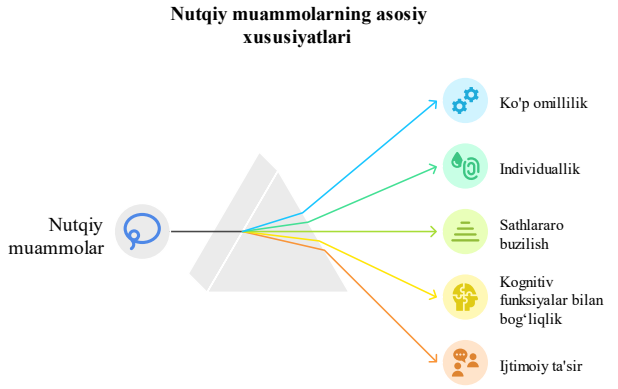

Figure 1. Main characteristics of speech problems

Multifactorial (polyfactorial) - the causes of speech problems are formed under the influence of various: genetic, neurological, psychological, social and pedagogical factors;

individuality – each subject's speech problem has its own specific form and degree; it depends on their overall developmental status, age, experience, and environment;

cross-level impairment – speech problems can manifest themselves at several language levels (phonetic, lexical, morphological, syntactic) simultaneously;

cognitive functions - speech disorders are often accompanied by changes in memory, attention, thinking, perception, and other cognitive processes;
Social impact – speech problems have a serious impact on a person's personal relationships, learning process, professional activities, and social adaptation.
it is appropriate to study the speech problem not only from a linguistic point of view, but also from a complex psychophysiological and cognitive-neuropsychological approach. Such an approach serves as the basis for finding solutions to speech problems and effectively organizing diagnostic and correction processes.
arose at the intersection of various fields - linguistics, psychology, neurology, speech therapy and neuropsychology, and in each field these problems are systematized differently according to their own goals and methods. Although at first glance these different approaches may seem contradictory, in fact they serve the comprehensive study of speech disorders.

A) Medical-neurological classifications. In classical medical classifications, speech problems are considered mainly in terms of central and peripheral lesions. For example, types of aphasia (Broca's aphasia, Wernicke's aphasia, global aphasia, etc.) are mainly associated with damage to specific areas of the brain. Dysarthria, on the other hand, occurs due to damage to the neuromuscular system that controls the articulatory apparatus. Although these classifications are important for clinical diagnosis, they do not take into account the cognitive and civic-communicative characteristics of speech processes.

B) Psycholinguistic and cognitive approaches. In psycholinguistics, speech problems are evaluated, first of all, as a violation of speech activity as a creative, intellectual and communicative process. For example, scientists such as AA Leontyev and NI Jinkin see speech problems as a violation of social activity, an ineffective form of speech-oriented activity. Here, as classification criteria:

- organizational structure of speech (direction, coherence);
- the degree of clarity and expressiveness of expression;
- full or partial expression of the speech purpose;

etc. This approach allows for the assessment of both the individual's speech competence and performance.

C) Neuropsychological classifications. In the neuropsychological school of AR Luria, the classification of speech problems is carried out taking into account the functional localization and dynamics of higher mental functions. For example, the activities related to the reception, processing and creation of speech are divided into separate functional blocks:
Block 1: reticular activity (awakening, attention);
Block 2: reception and processing of information (auditory means);
Block 3: Programming, controlling, and expressing speech (motor bases).
In this approach, a speech problem is a functional defect that occurs due to a disruption in the functioning of a specific block or a disruption in the communication between blocks.

D) Speech therapy and pedagogical classifications. In speech therapy, speech problems are more often systematized from the point of view of speech development defects in children. For example, specialists such as R.E. Levina and TB Filicheva distinguish the following types:
general speech development deficiency; phonetic-phonematic developmental disorders; motor and sensory alalia; logoneurosis, etc.
these classifications are convenient in the correctional work process, they do not adequately take into account cognitive and neurodynamic factors in adults.

D) Modern composite approaches. Some researchers (for example, SN Seyitlin, Yu.B. Korneychuk , etc.) propose to classify speech problems simultaneously based on

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several criteria - etiology, mechanisms, age, degree of influence and speech levels. This method is complex, but allows for a comprehensive description of real speech processes.

The above classifications allow us to group speech problems according to different criteria. However, each of them is suitable for a specific area or purpose. In practice, a multidisciplinary approach is required to fully understand and solve speech problems. Therefore, in the next section, a classification model developed by the author is proposed, which is based on theoretical foundations and is associated with practical observations.

Although the above classifications cover different aspects of speech problems, each of them is aimed at a specific field of study and is often associated with a specific age group, mechanism of action, or type of pathology. In practice, speech problems often arise as a result of a complex of factors, and a more universal, but functionally based system is required to analyze this process.

The classification system proposed by the author involves dividing the problems that arise into 5 main groups, based on the psycholinguistic and neuropsychological characteristics of speech activity (Figure 2) .

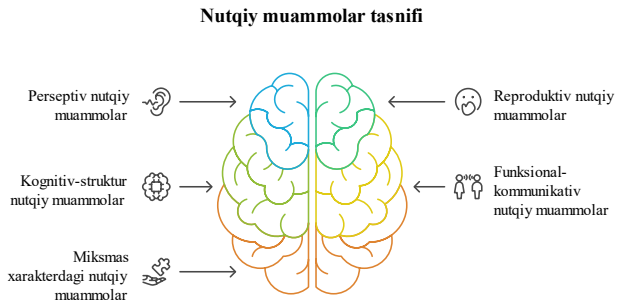

Figure 2. Classification of problems arising in speech activity based on psycholinguistic and neuropsychological characteristics

1. Perceptual speech problems (problems with reception). This group includes problems with hearing, understanding, and discrimination. They are often associated with sensory aphasia, phonemic deficits, cognitive developmental delay, or attention deficit disorder. Examples of observed conditions include: hearing sounds but not understanding the meaning of words, not being able to distinguish between words, and difficulty understanding fluent text.

2. Reproductive speech problems (problems with expression). This type of problem is characterized by difficulties in finding words, creating grammatical constructions, or in speech motor skills. They can be the result of motor aphasia, dysarthria, motor alalia , and neuromotor dysfunctions. For example: inability to complete a thought, speech rich in grammatical errors, impaired articulation.

3. Cognitive-structural speech problems (problems with meaning and coherence). In this group, the main role is played by the logical order of speech, its relevance to the context, its retention on the topic, and the implementation of speech intentions. They are mainly observed in cases of damage to the frontal areas of the brain, insufficiency of cognitive functions, and age-related dementia. For example: frequent topic changes, excessive or unnecessary information in speech, lack of coherence in the expressed thought.

4. Functional-communicative type of problems. In such cases , although the grammatical or phonetic aspect of speech is well preserved , it does not function effectively as a means of communication. A person cannot fully express his needs, thoughts, and situations through speech. This type is often associated with autism spectrum disorders, pragmatic speech disorders, and functional impairments in interpersonal communication. For example: speech that does not correspond to the communicative goal, inconsistency in word choice, misunderstanding of the social context.

5. Speech problems of a mixed nature (mixed forms). In practice, in most cases, a mixture of the above types is observed. In such situations, an integrated approach is required: as a result of speech therapy, neuropsychological and linguistic

examinations, a general picture of the problem is formed. For example: inability to formulate thoughts and lack of explanatory speech; simultaneous presence of difficulties in understanding someone else's speech and expressing oneself.

This classification model proposed by the author provides a systematic and functional approach from a civic-communicative perspective to the identification and analysis of various speech problems in practice. Such an approach paves the way for studying each problem based on linguistic, cognitive, and neuropsychological criteria and creates a theoretical basis for the analysis presented in the next section.

Based on the classification model proposed by the author, five types of speech problems were identified. This paragraph presents an analysis based on practical materials for each type . Observations were conducted in preschool educational institutions, special speech therapy centers and general schools during 2024-2025. In some cases, additional information was obtained based on neuropsychological findings.

Perceptual speech problems: difficulties in hearing and understanding.

Observation 1: A 5-year-old child (A.) is studying in a speech therapy group in a preschool educational institution. He listened to audio materials appropriate for his age group and then failed to complete the task of retelling words. His speech mainly contained unclear sounds and phoneme substitutions (*«kop» instead of «top», «shuv» instead of «suv»*). The level of cognitive and intellectual abilities was confirmed by tests.

In this case, the main factor is the lack of phonemic hearing and the ability to distinguish between means of flight. This is a clear example of a perceptual type of speech problem.

Reproductive speech problems: difficulty in expression.

Observation 2: An 8-year-old student (B.), a 2nd grade student of a comprehensive school, shows speech activity in communication, but his vocabulary is limited, words are often repeated. In the text-compilation task, he wrote short thoughts consisting of 3–4 sentences, grammatically incorrect and not logically connected. For example: *“I went to school. I read a book. I wrote with a pen. I am a good student.”*

In such cases, there is a high probability of motor deficits in expressive speech, delayed speech development, or low activity in neural connections related to motor functions of the brain.

Cognitive-structural speech problems: problems with logical coherence.

Observation 3: During the interview with a 10-year-old student (V.), he could not fully express a certain idea when answering questions, quickly deviated from the topic, confused personal impressions with real facts. For example, to the question “What do you like about school ?” he answered: *“School... that's where I play. My sister went to school yesterday. My sister is a good person. She has a white shirt* .”

In this case, there is a defect in the development of higher cognitive functions - attention, memory, logical reasoning, and focused speech intention. This condition indicates a neuropsychological developmental delay associated with the frontal zone. Functional-communicative speech problems.

Observation 4: A 6-year-old child (G.) does not want to answer questions asked in speech therapy sessions, does not initiate communication, and only responds in a way that is in keeping with his own wishes. Sentence construction and vocabulary are sufficient, but he responds in the wrong context. For example, the answer to the question “What is the weather like today ?” is: *“I am eating cake. Red cake* .”

In this case, there is a problem with the functional, social use of speech. This is associated with a pragmatic speech development deficit , which may be present in symptoms on the autism spectrum.

Mixed (mixed) speech problems.

Observation 5 : An 11-year-old student (D.) has applied to a speech therapy center. He has problems with both comprehension and expression in his speech. This student has difficulty understanding simple tasks, and has problems with choosing words when answering. He also makes mistakes when performing speech tasks, for example: *"The book is under the table, the grandfather is full. Mama is not at home… an injection* ."
there is a simultaneous deficit in perceptual, expressive , and cognitive mechanisms, which is considered a mixed speech disorder. Neuropsychological tests have confirmed that general cognitive functions are at a low level.
Based on the above observations, it can be concluded that each type of speech problem is associated with neuropsycholinguistic factors, the degree of their manifestation varies individually. Such an analysis serves as the basis for determining the exact type of problem, conducting a comprehensive diagnosis, and developing an individual correction program.
In order to scientifically analyze speech problems, identify their causes, and develop appropriate corrective measures, it is necessary to rely on certain diagnostic criteria. Neuropsycholinguistics, as a science that studies language in relation to brain activity, has developed a set of important criteria for such analysis. These criteria cover the perceptual, expressive, cognitive processing, motivational, and pragmatic functions of speech.
The criterion of phonemic hearing and discrimination ability. The ability to distinguish and differentiate phonemes is crucial in the process of correctly perceiving and processing speech material. This criterion is determined by the child's:
the ability to distinguish close phonemes (m/n, p/b, t/d);
words correctly;
It is assessed based on the repetition of briefly heard words (exo-speech).
For example , if substitutions such as *"eye - eye", "water - water", " foot - foot" are detected, there is a problem with phonemic hearing.*
Criterion of lexical-semantic activity. Vocabulary and the ability to selectively use lexical units in a semantically appropriate manner are one of the main criteria determining speech activity. This criterion is assessed as follows:
be able to use synonyms to express the same subject; word selection in accordance with general lexical rules; correctly placing words in context .
For example, saying "to eat a pencil" instead of " *to write with a pencil " is a sign of lexical-semantic inconsistency.*
Grammatical construction ability criterion . The ability to follow syntactic rules when constructing sentences, the correct arrangement of words in a sentence, and the ability to coordinate their forms of case, tense, gender, and number are assessed within the framework of this criterion. This criterion includes:
the ability to construct simple and complex sentences;
grammatical connection of members in a sentence ;
includes cases of agreement between the verbs and nouns used .
For example : *"I am reading a book"* , *"Mother has gone to the market"* - indicates a grammatical error .
The criterion of logical-pragmatic consistency. The logical consistency and semantic coherence of speech, as well as its ability to adapt to socio-communicative goals, play an important role in neuropsycholinguistic analysis. This criterion:
the qualities of initiating, developing and concluding an idea;
the relevance of the speech to the topic;
It is based on the ability to understand the purpose of communication and express it verbally accordingly.
For example: *"My friends at school. My mother is a potato. The car is a toy* " - logical coherence is lost, thoughts are discontinuous.

Kinetic and praxis criteria. Criteria of motor speech activity related to the ability to speak , that is, articulation movements, the correct pronunciation of sounds, and processes related to speech motor skills.
incorrect pronunciation of sounds in oral speech;
to say words in parts;
haste or slowness in speech, repetition.
For example : *"Hello. I... I... I'm... I'm..."* is evidence of a delay in the motor-kinetic mechanism.
Emotional-motivational criterion. This criterion assesses the ability to initiate speech, engage in dialogue, enjoy communication, or, conversely, avoid it. This criterion:
speech motivation (initial intention);
level of speech activity;
reaction to social signals (questions, appeals).
For example, if a child does not want to engage in communication, does not answer questions, and looks indifferently, then there are violations in the pragmatic and motivational mechanisms.
In the neuropsycholinguistic analysis of speech problems, the above criteria are used in conjunction. These criteria help not only to identify speech errors, but also to reveal their causal basis, to link them with neurostructural mechanisms, and to individualize corrective work. Practical studies show that in each child, a speech problem is manifested not in isolation, but in violation of several criteria. Therefore, an integrated approach to analysis is the most effective method.
It is not enough to assess speech problems only from a formal linguistic perspective. A neuropsychological approach is necessary to fully understand the mechanisms of their emergence , manifestation and maintenance. This interpretation is carried out in connection with the brain structures, functional blocks and cognitive processes that control speech activity.
The issue of localization of speech disorders.
The results of practical analysis have shown that various speech problems are directly related to specific areas of the brain. For example:

- *Phonemic hearing problems* are associated with a disruption in the functioning of the auditory centers (Wernicke's area) located in the upper lobe of the dominant hemisphere .
- *Problems with expressive speech* are due to functional weakness of Broca's center, located in the frontal lobe, that is, the structures that control speech motor skills.
- *Semantic and pragmatic disorders* are caused by higher cognitive processes, prefrontal areas, and their connections with other centers.

This interpretation suggests that not only mechanical factors, but also disruption of functional neural connections, may play an important role in the emergence of speech problems.
cognitive processes and speech activity.
Speech activity functions as part of the cognitive system and relies on processes such as recall, concentration, thought planning, logical connection, and organization of semantic space. The results of the practical analysis showed that :
Speech errors are often associated with *processing speed* , *attention span* , and *working memory deficits.*
typically exhibit semantic deficits in speech also have difficulties in visual and verbal memory tests.
Therefore, the root causes of speech problems encompass not only the familiar language units, but also the general cognitive processes associated with them.
The impact of motivational and emotional blocks.
Practical observations have shown that speech difficulties in some children are associated not only with physiological or cognitive causes, but also with motivational blocks. In particular:
low desire to communicate, poor response to social signals;
insult or criticism;

Emotional interruptions (laughing at, punishment) exacerbate speech disorders.
In these cases, neuropsychological interpretation requires taking into account the connection of speech with internal personal and social motivations.
Interpretation based on the complex mechanisms model.
The analysis revealed that each speech problem is manifested as a disorder of the entire speech-motivational-communicative system, not a separate brain center or function. For example:

- Phonemic disorders ↔ auditory analyzer + working memory.
- Grammar problems ↔ cognitive planning + motor activity.
- Lexical problems ↔ semantic field + ability to refer to information.

Such an interpretation requires an individual approach to each clinical case, that is, the development of a therapeutic strategy based on local and active mechanisms, rather than general ones.
In conclusion, it can be said that neuropsychological interpretation is an important factor not only in classifying speech problems, but also in determining their source, the process of their spread, and methods of working on them. This approach allows us to form a universal analytical model that is widely used in the fields of correctional pedagogy, speech therapy, and neuropsychology.
The analysis of speech problems on a neuropsycholinguistic basis has shown the need to focus on their multifactorial nature. It has been found that such problems are closely related not only to disorders in the language system, but also to brain activity, cognitive processes, and motivational states.
showed that when classifying speech disorders, it is necessary to take into account not only linguistic, but also neuropsychological criteria. This approach allows you to identify the true causes of the problem, select effective correction methods, and take an individual approach to each case.

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Linguopragmatics of Political Speech Euphemisms in Languages of Different Systems

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Abstract
The present study investigates the linguopragmatic functions and structures of political speech euphemisms in English, Uzbek, and Russian. Euphemisms are powerful communicative tools employed to soften political realities, mask unfavorable truths, and create ideological alignment. Analyzing political discourse from a linguopragmatic lens allows a deeper understanding of how euphemisms serve as mechanisms of manipulation, persuasion, and power negotiation. The comparative analysis highlights both universal strategies and language-specific expressions rooted in sociopolitical and cultural contexts. By examining political texts, media reports, and public speeches, this research identifies and categorizes euphemisms based on function, structure, and pragmatic intent. Results reveal that euphemistic usage reflects political ideologies, sociocultural sensitivities, and strategic ambiguity across the three languages. The study contributes to the broader field of political linguistics, particularly in understanding how euphemistic language operates in multilingual political contexts.
Keywords: linguopragmatics, euphemism, political speech, English, Uzbek, Russian, comparative analysis, manipulation.

Introduction

Language, in political discourse, functions as both a reflection of ideology and an instrument of influence. Among the tools deployed in such contexts, euphemisms hold a distinctive role in mitigating harsh realities and guiding public perception. Euphemisms are linguistic strategies used to obscure, soften, or reframe potentially offensive or controversial content. In political speech, this becomes particularly critical as governments, officials, and institutions strive to maintain authority, legitimacy, and public support.

This paper explores the linguopragmatics of political speech euphemisms across three distinct languages: English, Uzbek, and Russian. These languages not only represent different linguistic systems—Germanic, Turkic, and Slavic—but also embody different political traditions, ideologies, and communicative norms. The study asks: how do euphemisms function in political speech across these languages, and what pragmalinguistic strategies are used to embed them in discourse? What cultural or ideological motivations underlie the use of euphemisms in each context?

To answer these questions, the study adopts a comparative, cross-linguistic framework grounded in pragmatics and discourse analysis. By focusing on euphemisms used in official speeches, government statements, and political media from 2010 to 2024, the paper offers insight into how political actors linguistically encode sensitive topics, such as war, economic crises, corruption, and public unrest.

Literature Review

The study of euphemisms in political discourse lies at the intersection of pragmatics, discourse analysis, sociolinguistics, and political communication. Euphemisms serve as linguistic buffers—strategic substitutions designed to obscure unpleasant realities or soften public perception. From a linguopragmatic perspective, they are vital tools of power negotiation, ideological framing, and institutional face-saving. This section explores prior research on

euphemisms, their functions in political communication, and how they manifest differently across English, Uzbek, and Russian languages and cultures.

The foundational work of Allan and Burridge (1991) defines euphemism as "an alternative to a dispreferred expression, to avoid possible loss of face." Their taxonomy of euphemism includes protective, evasive, and uplifting functions, many of which are directly applicable to political speech. Euphemisms, in this view, operate within the framework of politeness theory (Brown & Levinson, 1987), where language choices reflect the speaker's intent to avoid offense, especially in public and institutional settings.

Lakoff and Johnson's (1980) *Conceptual Metaphor Theory* deepens this understanding by suggesting that much of political language is metaphorically structured. Terms like "collateral damage" or "regime change" function euphemistically by invoking more palatable conceptual frames, reducing the emotional impact of violent or controversial actions. Charteris-Black (2005), in *Politicians and Rhetoric*, explores metaphorical euphemism as a tool for persuasion, framing it within the cognitive-discursive model.

In English-language contexts, scholars such as Chilton (2004) and Wodak (2015) have explored the role of euphemisms in legitimizing state actions, especially in contexts of war, surveillance, and immigration. Chilton's model of *strategic speech acts* suggests that euphemisms serve not merely to avoid taboo topics but also to manipulate the audience's mental representations of reality. For instance, renaming "torture" as "enhanced interrogation" is not just an act of softening—it is a deliberate strategy to influence legal, moral, and public judgments.

Research into Russian political euphemisms highlights the continuity of Soviet-era linguistic practices into modern governance. Ryazanova-Clarke (2006) explores how official Russian discourses rely on abstract and technical euphemisms to normalize political control. The term "специальная военная операция" (special military operation), frequently used instead of "война" (war), exemplifies such semantic camouflage. Pavlovskiy (2017) notes that euphemistic language in Russia often functions within state-dominated media systems, where political euphemisms not only obscure truth but actively reconstruct public reality.

Uzbek-language euphemisms remain a relatively under-researched area, but emerging literature has begun to fill the gap. Tursunov and Rakhimova (2021) examine euphemisms in Uzbek political discourse through cultural linguistics, showing how expressions like "ijtimoiy himoya" (social protection) or "milliy qadriyatlar" (national values) are used to mask economic struggles or political restrictions. These euphemisms often rely on collectivist values and indirectness, characteristic of high-context communication cultures (Hall, 1976). Nazarov (2022) expands this argument by suggesting that euphemisms in Uzbek are also shaped by Islamic moral codes and post-Soviet discursive norms.

Cross-linguistic studies, such as those by Halmari and Virtanen (2005), emphasize that while euphemistic strategies are universal, their forms and motivations are deeply culture-bound. For instance, while English may use bureaucratic language to create distance ("downsizing"), Russian prefers technical abstraction ("реорганизация"), and Uzbek uses generalized cultural appeals ("xalq farovonligi uchun qilingan islohotlar" — reforms done for public well-being).

Reisigl and Wodak's (2009) *Discourse-Historical Approach* (DHA) offers an integrative model for analyzing euphemisms in political language, focusing on historical, institutional, and social dimensions. They argue that euphemisms should not be treated in isolation, but as part of a larger discourse strategy that includes nomination, predication, argumentation,

perspectivization, and intensification/mitigation.

Recent advancements in corpus linguistics have also contributed to euphemism analysis. Baker (2006) demonstrates how corpora can reveal patterns of lexical avoidance or substitution in political speech. In a cross-linguistic context, corpus tools allow for a more empirical tracking of euphemistic trends across media and time.

Methodology

This study follows a qualitative comparative method, analyzing political texts from three language systems: English (UK, USA), Uzbek (Uzbekistan), and Russian (Russia). The corpus includes:

1. **Official speeches** by heads of state and government ministers.
2. **Media publications** from national news outlets (BBC, O‘zbekiston 24, Россия Сегодня).
3. **Political statements** from parliamentary debates and press releases.

The data were collected from digital archives, news databases, and governmental websites. A total of 300 euphemistic expressions (100 from each language) were extracted and analyzed according to the following criteria:

- **Lexical structure** (e.g., metaphorical, metonymic, abstract).
- **Pragmatic function** (e.g., concealing, legitimizing, distancing).
- **Cultural references** (e.g., traditional values, national ideology).

The analysis utilized a linguopragmatic framework, incorporating theories of relevance (Sperber & Wilson), face-saving strategies (Brown & Levinson), and conceptual metaphor theory (Lakoff & Johnson). The Results section includes frequency tables and a comparative matrix of euphemism categories.

Results

The findings reveal both convergences and divergences in the use of euphemisms across the three language systems. The analysis categorized euphemisms into five major functions:

1. **Concealing Negative Reality**
2. **Legitimizing Political Action**
3. **Manipulating Public Perception**
4. **Mitigating Accountability**
5. **Framing National Ideology**

The following tables summarize the distribution and type of euphemisms across the selected political languages.

Table 1. Functional Categories of Political Euphemisms (Frequency per 100 Units)

Function	English (%)	Uzbek (%)	Russian (%)
Concealing Negative Reality	35	42	38
Legitimizing Political Action	22	18	20
Manipulating Public Perception	18	15	17
Mitigating Accountability	15	11	13
Framing National Ideology	10	14	12

The English corpus includes euphemisms such as “collateral damage” (civilian casualties), “quantitative easing” (money printing), and “enhanced interrogation” (torture). These examples reflect an institutionalized tendency toward lexical obfuscation.

In Uzbek, euphemisms are often tied to national pride or traditional values. Examples include “ijtimoiy himoya” (welfare, often masking poverty issues), “xatoliklar” (errors, used instead of systemic failures), and “muammo” (problem, rather than crisis).

In Russian, euphemisms serve ideological functions, such as using “специальная военная операция” (special military operation) instead of “война” (war), and “недопустимые действия” (unacceptable actions) for state repression.

Table 2. Structural Types of Euphemisms

Structure Type	English	Uzbek	Russian
Metaphorical	30	20	25
Abstract/Generalized	40	50	45
Bureaucratic/Technical	20	10	20

Religious/Traditional	5	15	3
Nationalistic/Patriotic	5	5	7

English euphemisms often rely on technical jargon, distancing the speaker from the emotional impact. Uzbek euphemisms, on the other hand, draw more heavily on cultural and religious overtones, appealing to collective values and social harmony. Russian euphemisms frequently use bureaucratic abstraction to diminish perceived threat or blame.

Table 3. Sample Cross-Linguistic Euphemisms and Their Context

Sensitive Topic	English (UK/US)	Uzbek (Uzbekistan)	Russian (Russia)
War	“Peacekeeping mission”	“Tashqi tahdidga qarshi chora”	“Специальная операция”
Economic Crisis	“Economic slowdown”	“O‘sish sur’atining pasayishi”	“Экономические трудности”
Corruption	“Misconduct”	“Tizimdagi kamchilik”	“Нарушения”
Protest/ Revolt	“Unrest”	“Vaziyatni barqarorlashtirish”	“Мятеж”
Layoffs/ Job Losses	“Restructuring”	“Ish o‘rinlarini optimallashtirish”	“Сокращение персонала”

These euphemisms function not only to obscure unpleasant realities but also to exert power over interpretation. In political linguistics, this control over meaning is referred to as *discursive hegemony*.

Discussion

The analysis confirms that euphemisms in political speech are not random stylistic choices, but deeply embedded linguistic strategies shaped by culture, politics, and ideology. In all three languages, euphemisms serve as a linguistic shield against criticism and a tool for controlling the political narrative.

In English-speaking political contexts, especially in U.S. and UK government rhetoric, euphemisms are often institutionalized. The military-industrial complex has generated a lexicon where violence is sanitized. For instance, “surgical strike” masks the destructive force of bombings, while “regime change” implies a strategic and humane act, rather than foreign intervention.

Uzbek political euphemisms tend to rely more on collectivist ideologies, religious references, and abstract generalities. Terms like “xalq manfaatlari yo‘lida” (in the interest of the people) often accompany policies that may, in fact, limit freedom or transparency. The culture of high-context communication encourages ambiguity, and euphemisms are deployed to protect face and avoid direct confrontation.

Russian political euphemisms operate within a framework of centralized control and legacy narratives from Soviet discourse. The state's monopoly on media has institutionalized euphemistic practices, turning them into tools of state propaganda. The use of expressions like “stabilnost” (stability) and “integratsiya” (integration) masks economic dependency and geopolitical expansionism.

Despite these differences, a unifying thread emerges: euphemisms in all three languages help reinforce the speaker’s ideological positioning while diffusing public dissent. They are not simply a way of “speaking nicely” but function as ideological instruments that mediate the power relationship between the state and its citizens.

Conclusion

This research has shown that euphemisms in political speech are powerful instruments of pragmatic strategy, deployed to protect political face, guide public interpretation, and reinforce ideological norms. A cross-linguistic comparison of English, Uzbek, and Russian euphemisms reveals both universal communicative strategies and language-specific features rooted in political tradition, culture, and institutional discourse practices.

Understanding how euphemisms function in political speech allows us to critically engage with the language of power. In a time when information is both abundant and

manipulated, recognizing euphemistic patterns is vital for developing media literacy and civic awareness.

Future studies might explore diachronic shifts in euphemism usage across changing regimes or investigate the reception of euphemistic language among different demographic groups.

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Digital Competence in English Language Teaching: Challenges and Perspectives for Effective Integration

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Abstract
In an era defined by accelerated technological advancement and the widespread digitalization of educational systems worldwide, the role of digital competence in English language teaching has emerged as a central pillar for ensuring both the relevance and quality of foreign language education. This paper investigates the multidimensional nature of digital competence, analyzes empirical data collected from English teachers in Uzbekistan, and discusses practical implications for enhancing digital literacy among educators to meet the evolving demands of 21st-century classrooms. By applying the IMRAD framework, the study not only outlines the current status quo but also provides insights into sustainable strategies for bridging existing gaps and maximizing the pedagogical potential of digital tools.
Keywords: digital competence, English language teaching, ICT integration, teacher training, educational innovation.

1. Introduction

In the context of global educational reforms and the ever-increasing emphasis on digitalization, the ability of educators to effectively integrate digital technologies into their teaching practices has become a decisive factor in the quality and effectiveness of foreign language instruction. The teaching of English as a foreign language, in particular, demands that teachers possess not only subject-specific knowledge and pedagogical skills but also a robust set of digital competences that enable them to design, deliver, and evaluate engaging learning experiences tailored to the needs of digitally native learners. Although the widespread availability of technological devices and internet access has opened unprecedented opportunities for innovative teaching, a considerable gap remains between the theoretical potential of digital tools and their actual, consistent application in everyday classroom practice. Recent research underscores that digital competence extends beyond mere operational skills, encompassing critical and ethical dimensions such as online safety, intellectual property awareness, and the ability to foster digital citizenship among learners. Consequently, the question of how to develop and sustain high levels of digital competence among English language teachers represents an urgent priority that requires both systemic support and individual commitment.

2. Methods

To gain a comprehensive understanding of the current level of digital competence among English language teachers, this study employed a mixed-methods approach combining quantitative and qualitative research instruments. A structured questionnaire was distributed among 50 English language teachers working at secondary schools in Navoi region, Uzbekistan. The questionnaire included closed and open-ended items designed to assess teachers' self-reported digital skills, frequency and purpose of using digital resources, perceived barriers to integration, and attitudes towards continuous professional development in the field of educational technology. To supplement the survey data, semi-structured interviews were conducted with 10 selected teachers who volunteered to provide deeper insights into their personal experiences and institutional contexts that facilitate or hinder the meaningful integration of digital tools.

Quantitative data were processed using descriptive statistical analysis, while qualitative responses were transcribed, coded, and analyzed thematically to identify recurrent patterns, success stories, and challenges. Ethical considerations, including informed consent and confidentiality, were strictly observed throughout the research process.

3. Results

The survey results indicate that a significant proportion of English teachers (82%) acknowledge the pivotal role of digital competence in improving the quality and appeal of English lessons, yet only 47% reported using digital tools in their classes on a weekly basis. Among the tools most commonly utilized were language learning applications such as Duolingo and Quizlet, online quiz platforms like Kahoot!, and general-purpose tools like Google Classroom and Zoom, especially during the COVID-19 pandemic when remote and hybrid teaching models became unavoidable. Despite this positive trend, more than half of the respondents admitted that they rarely engage in the creation of original digital content, such as interactive tasks, video lectures, or online assessment materials, citing a lack of technical expertise and time constraints as the main obstacles. Furthermore, teachers highlighted the insufficiency of digital infrastructure, with 64% pointing to unstable internet connections and outdated hardware as major barriers that hinder their motivation and ability to consistently implement digital practices.

4. Discussion

The findings of this study echo global trends observed in similar educational contexts, where the enthusiasm for digital transformation is often tempered by practical constraints and gaps in institutional support. It is evident that digital competence should be conceptualized as a holistic construct that intertwines technical skills with pedagogical know-how, ethical awareness, and continuous reflective practice. Therefore, enhancing digital competence among English language teachers requires a multi-pronged approach that addresses infrastructural, organizational, and individual dimensions simultaneously. Firstly, schools and educational authorities must ensure that teachers have access to reliable internet services, modern digital devices, and technical support systems. Without addressing these basic infrastructural needs, even the most motivated teachers may find themselves unable to translate their ideas into practice. Secondly, professional development programs should move beyond one-time workshops and instead provide sustained, practice-oriented training modules that focus on practical skills such as creating digital content, designing blended and flipped classroom models, and evaluating digital resources for language learning. Peer mentoring programs and online communities of practice can further empower teachers by fostering collaborative learning and the sharing of best practices. Moreover, integrating digital competence development into pre-service teacher education curricula would help cultivate positive attitudes and foundational skills early in teachers' careers, ensuring that new generations of educators are better prepared to leverage digital tools creatively and responsibly. Policymakers and school leaders must also recognize that motivating teachers to embrace digital transformation often requires not only technical training but also incentives such as recognition, additional support, and time allocation for experimenting with new methodologies.

5. Conclusion

This study confirms that while the awareness of the importance of digital competence in English language teaching is relatively high among teachers, the consistent and effective integration of digital tools into daily practice remains constrained by infrastructural challenges, limited training, and a lack of collaborative platforms. Addressing these challenges calls for concerted efforts from multiple

stakeholders, including educational institutions, policymakers, and the teachers themselves. By investing in reliable digital infrastructure, providing ongoing, relevant professional development opportunities, and cultivating a culture of innovation and knowledge sharing, educational systems can unlock the full potential of digital technologies to enrich English language learning and better prepare students for the demands of a rapidly changing, interconnected world. Future research could expand this investigation by exploring the long-term effects of specific digital interventions on students' language proficiency and by conducting comparative studies across different regions or countries to identify context-specific best practices. Ultimately, developing robust digital competence among English language teachers should be viewed not as an isolated goal but as an integral part of broader efforts to modernize education and foster lifelong learning skills in the digital age.

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Discursive Manipulation in Political Apologies Cross-Cultural Pragmatic Study in English, Uzbek, and Russian

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Abstract
Political apologies are linguistically strategic acts that aim to mitigate political crises, restore public trust, and manage institutional face. While often perceived as simple speech acts, political apologies are layered with power dynamics, vagueness, and intentional ambiguity. This study investigates how political apologies are pragmatically constructed in English, Uzbek, and Russian political contexts and how discursive manipulation is embedded within them. Using a comparative corpus of 90 official political apologies—30 from each language—the study identifies the linguistic markers of insincerity, avoidance of responsibility, and indirectness. Findings reveal that while English apologies often rely on formulaic expressions with carefully balanced responsibility, Uzbek political apologies tend to emphasize collective cultural values and moral authority, whereas Russian apologies frequently exhibit distancing strategies and indirect admission. Through linguopragmatic analysis, the study highlights how political apologies are performative yet rarely transparent, shaped by sociopolitical pressures and the need to control narrative outcomes.
Keywords: political apology, pragmatics, discourse manipulation, English, Uzbek, Russian, cross-cultural communication

Introduction

In political discourse, an apology is rarely a mere admission of fault; rather, it is a calculated communicative act. Politicians apologize not only to admit wrongdoing but also to preserve their public image, restore political legitimacy, and reduce public backlash. Unlike personal apologies, political apologies are often fraught with strategic ambiguity, carefully negotiated meanings, and discursive manipulation. The apologizer seeks to balance acknowledgment and self-protection, expressing regret without necessarily conceding culpability.

This paper focuses on the pragmatic and discursive features of political apologies in three linguistically and culturally distinct contexts: English, Uzbek, and Russian. These languages, tied to different political systems and rhetorical traditions, offer a rich comparative basis to explore how apologies are framed, softened, and instrumentalized in political communication. The significance of this study lies in its contribution to understanding political speech acts beyond their surface meaning. While much research has explored apologies in interpersonal contexts, less has been done to dissect them as political performances influenced by sociocultural norms and ideological pressures. By comparing political apologies across English, Uzbek, and Russian, we can identify not only linguistic variation but also cultural attitudes toward responsibility, leadership, and public discourse.

Literature Review

Political apologies have long intrigued scholars of discourse and pragmatics for their complex interplay between language, power, and public accountability. Unlike personal apologies, which typically seek interpersonal reconciliation, political apologies function within broader ideological, legal, and institutional frameworks. They are highly strategic, often constructed to deflect blame, preserve legitimacy, and manage public perception rather than to express genuine remorse.

Foundational work on apologies as speech acts comes from Austin (1962) and Searle

(1976), who described apologies as performative utterances with illocutionary force. Brown and Levinson (1987) later incorporated apologies into their politeness theory, framing them as face-threatening acts that require mitigation. In political contexts, apologies are further complicated by competing demands: appearing accountable while maintaining institutional power and credibility.

Blum-Kulka and Olshtain's (1984) work on cross-cultural pragmatics demonstrated that cultural norms deeply influence how apologies are structured. In high-context cultures, indirectness and collectivism tend to shape the way apologies are delivered, often avoiding direct admission of guilt. This observation aligns with Trosborg's (1995) taxonomy of apology strategies, which includes expressions of regret, acknowledgment of responsibility, explanation, and offer of repair—each of which can be manipulated or omitted in political speech.

Lakoff (2001) introduced the idea of "rhetorical politeness" in political discourse, emphasizing how politicians use language to maintain moral authority without admitting error. Her analysis of political statements in the U.S. showed how apologies can be constructed to avoid culpability while appearing sincere. Similarly, Kampf (2009) investigated political apologies as strategic rituals, highlighting their reliance on vague language, passive constructions, and third-party blame.

In English-speaking democracies, political apologies often follow a formulaic structure. Benoit (1995) proposed the "Image Restoration Theory," which outlines common rhetorical strategies used by public figures in response to scandals, including denial, evasion of responsibility, and corrective action. These strategies often appear in apologies that balance acknowledgment with self-defense, especially in politically sensitive cases.

Russian political communication exhibits a different pattern. According to Ryazanova-Clarke (2006), Russian political discourse tends to be hierarchical and impersonal, favoring the use of passive voice and abstract nominalizations to obscure agency. This aligns with Wodak's (2015) observation that in authoritarian or centralized regimes, language is employed to maintain ideological control rather than to express transparency. Vinogradova (2020) emphasizes that strategic vagueness and lack of directness in Russian apologies are not simply linguistic preferences but ideological tools for managing dissent and preserving state authority.

Uzbek political apologies are shaped by cultural norms rooted in collectivism, traditional moral values, and post-Soviet political structures. According to Tursunov and Rakhimova (2021), Uzbek political figures often apologize on behalf of institutions or the state rather than as individuals. Appeals to "xalqimiz" (our people) and references to Islamic or national values are common, suggesting that the apology is less about admitting failure and more about reinforcing ethical leadership. Yusupova (2021) found that Uzbek apologies tend to focus on social harmony, with little emphasis on legal responsibility or concrete corrective action.

Cross-linguistic studies such as those by Holmes (1995) and Kádár and Haugh (2013) underline that apology conventions are culturally mediated. What may be considered a sincere apology in one context can be interpreted as evasive or insincere in another. Therefore, the comparative analysis of political apologies across English, Uzbek, and Russian must consider not only structural elements but also the sociocultural ideologies that guide communicative behavior.

Fairclough (1995) and van Dijk (1997) argue that political discourse must be analyzed as part of larger systems of social and ideological reproduction. From this perspective, political apologies are not isolated speech acts but parts of discursive strategies that help political actors maintain control over narrative framing. Critical

discourse analysis (CDA) provides tools to deconstruct these apologies, revealing the embedded power relations and manipulative functions.

Methodology

This study employs a comparative discourse-pragmatic methodology. A corpus of 90 political apologies (30 from each language) was compiled from public speeches, televised press conferences, and official statements issued between 2018 and 2024. The selection criteria required that the apology be delivered by a high-ranking political figure in response to a scandal, policy failure, or crisis, such as corruption charges, mishandling of protests, or diplomatic mistakes.

The texts were analyzed for linguistic markers of apology (e.g., “I apologize,” “we regret,” “it was a mistake”) as well as discursive features including vagueness, passivization, nominalization, hedging, and pronoun choice. The analysis was guided by theoretical frameworks in pragmatics, particularly speech act theory (Austin 1962; Searle 1976) and politeness theory (Brown & Levinson 1987), along with critical discourse analysis (Fairclough 1995) to interpret ideological positioning.

Each apology was coded for (a) presence or absence of direct responsibility, (b) clarity of the apologizer’s agency, (c) degree of mitigation, and (d) appeal to cultural or national values. The results were tabulated and compared across the three languages.

Results

The data revealed significant linguistic and pragmatic differences in how political apologies are framed and delivered across the three languages. These differences reflect not only language-specific structures but also underlying sociopolitical ideologies and cultural norms.

The first observation was the variance in directness and personal responsibility. English apologies frequently used first-person pronouns, though often balanced with passive constructions to diffuse blame. Phrases such as “mistakes were made” or “we did not meet expectations” dominated the English corpus. In contrast, Uzbek apologies often employed collective pronouns and appeals to national unity or moral rectitude. Expressions such as “xalqimizdan kechirim so‘raymiz” (we ask forgiveness from our people) or “vaziyatdan to‘g‘ri xulosa chiqarildi” (a proper lesson was learned) demonstrated a collectivist framing. Russian apologies showed the highest rate of blame-shifting and indirect acknowledgment, using impersonal structures like “произошёл инцидент” (an incident occurred) and minimizing explicit responsibility through lexical vagueness.

Table 1. Use of Personal vs. Collective Pronouns in Apologies (%)

Language	"I" / Personal Pronouns	"We" / Collective Pronouns	Impersonal Forms
English	46	42	12
Uzbek	18	72	10
Russian	11	38	51

The data show that English political figures are more likely to use first-person expressions, but often with mitigating language. Uzbek speakers heavily favor collective pronouns, aligning the apology with group values or shared outcomes. Russian apologies, meanwhile, rely significantly on impersonal constructions to obscure agency.

Table 2. Responsibility Acknowledgment in Political Apologies (%)

Language	Direct Admission	Indirect Admission	No Admission
English	35	52	13
Uzbek	24	61	15
Russian	16	43	41

English apologies showed the highest rate of direct admissions of wrongdoing, though often accompanied by hedging language. Uzbek and Russian political apologies demonstrated a preference for indirect admissions, preserving face while acknowledging failure. Notably, Russian political apologies had the highest rate of no admission at all, instead expressing "regret"

or framing the issue as a systemic failure unrelated to individual actions.

Table 3. Discursive Strategies Identified in Apologies (Occurrence per 30 Texts)

Strategy	English	Uzbek	Russian
Hedging	22	15	19
Nominalization	18	20	24
Passive Voice	25	14	28
Moral Appeal	11	27	8
Blame Shifting	13	9	26

These findings show a pattern of linguistic manipulation tailored to each cultural and political setting. English speakers tend to hedge, use passive constructions, and carefully distribute blame. Uzbek apologies frequently incorporate appeals to morality, national values, and unity, often avoiding explicit personal guilt. Russian speakers rely more on depersonalization and strategic vagueness, reflecting hierarchical authority structures and a cultural tendency toward institutionalized messaging.

Discussion

The comparative analysis illustrates how political apologies are contextually and ideologically shaped. While they may appear to share universal markers of regret, the way they are constructed varies substantially across language systems and political cultures.

In English political rhetoric, apologies are expected, especially in liberal democracies where public accountability and media scrutiny are institutionalized. Yet even in such settings, apologies are carefully engineered to protect reputation. The use of passive voice and vague noun phrases allows politicians to appear contrite without admitting to specific misdeeds. For instance, the phrase “mistakes were made” sidesteps the agent of the mistake entirely.

In Uzbek political discourse, the apology serves a more symbolic function. It is not just about rectifying an error but reaffirming cultural and ethical leadership. The use of collective pronouns and references to national identity or Islamic ethics frames the apology within a moral narrative. This is consistent with high-context communication cultures, where indirectness and face-saving are prioritized.

Russian apologies often minimize culpability by using impersonal forms and redirecting blame to external factors, such as bureaucratic systems or undefined “mistakes.” This reflects a historical pattern in Russian political communication, where transparency is limited and state authority is prioritized over individual accountability. The high frequency of nominalization and passive voice contributes to semantic ambiguity, enabling leaders to appear responsive without exposing themselves to political damage.

Ultimately, political apologies are not genuine acts of remorse but performances shaped by institutional expectations, cultural codes, and ideological calculations. They are designed to manage public perception, limit political fallout, and reinforce a particular image of leadership.

Conclusion

This study has demonstrated that political apologies, though seemingly straightforward speech acts, are deeply embedded with pragmalinguistic strategies and ideological motives. By analyzing apologies in English, Uzbek, and Russian, the research has shown that each language community has developed its own rhetorical mechanisms for apology shaped by political tradition, media culture, and societal values. English apologies tend to be more formulaic and legally aware, balancing acknowledgment with rhetorical mitigation. Uzbek apologies rely on cultural appeals and collective language, reinforcing moral authority. Russian apologies are marked by distancing tactics, impersonal constructions, and avoidance of direct blame.

These distinctions not only reflect linguistic diversity but also reveal how language is employed in the service of political power. Apologies in political discourse are less about reconciliation and more about narrative control, image restoration, and strategic ambiguity. Future research might

explore audience reception of these apologies or analyze apologies in less institutionalized political environments where media plays a different role.

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Жизнь И Творческий Путь Алишера Навои, Современная Узбекская Литература

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Аннотация
Алишер Навои, один из величайших поэтов узбекской литературы, своей жизнью и творчеством обогатил культурное наследие не только узбекского народа, но и всего тюркского мира. Он родился в Герате в 1441 году и осуществлял свою творческую деятельность преимущественно в Хорасане и Моваруннахре. За свою жизнь Навои столкнулся со многими историческими событиями, политическими изменениями и культурными процессами. Особого внимания заслуживают его творческий путь, влияние на литературу, культуру и общественную жизнь своего времени. В данной статье представлена информация о жизни и творческом пути Алишера Навои, современной узбекской литературе.
Ключевые слова: Алишер Навои, современная литература, культура, творчество, язык, жанр, медресе.
Abstract
Alisher Navoi, one of the greatest poets of Uzbek literature, enriched the cultural heritage of not only the Uzbek people, but the entire Turkic world through his life and work. He was born in Herat in 1441 and carried out his creative activity mainly in Khurasan and Mowarounnahr. During his life, Navoi faced many historical events, political changes and cultural processes. His creative way, influence on the literature, culture and social life of his time are of particular note. This article provides information about the life and creative path of Alisher Navoi, modern Uzbek literature.
Keywords: Alisher Navoi, modern literature, culture, creativity, language, genre, madrassas.

ВВЕДЕНИЕ

Великий поэт жил в Хорасане, столице Герате. С древнейших времен, в том числе и во времена Навои, Хорасан и Моваруннахр были одной страной, управляемой одним правителем, а большую часть населения составляли тюркские народы. Захириддин Мухаммад Бабур говорит, что навайский язык «верен андижанскому диалекту». Поэтому мы, узбеки, являемся прямыми наследниками великого Навои, народа, образовавшего древнейшую ветвь тюрков и ставшего сегодня узбекской нацией. Чувство происхождения и преемственности такой мировой породы, как Навои, наполняет сердце каждого узбекистана чувством гордости и гордости. Алишер вырос под особым воспитанием и присмотром, поскольку жил в дворцовой обстановке. Ученый находился в кругу добродетельных. Когда ему было 3-4 года, он удивил гостей, прочитав стихотворение Касыма Анвара, известного поэта своего времени. В 5 лет его отдали в школу. Он учился у будущего султана Хусейна Бойкара.

АНАЛИЗ ЛИТЕРАТУРЫ И МЕТОДОЛОГИЯ ИССЛЕДОВАНИЯ

Семья Алишеров вернулась в Герат в 1451 году. Вскоре на трон сядет Абул Касим Бабур Мирза. Отец Алишера, Гиясиддин Мухаммад, назначен губернатором Сабзавора. Алишер продолжает учебу. Он любит читать произведения будущего поэта Саади Ширози «Гюлистан» и «Бостон». Особенно произведение Фаридиддина Аттара «Мантик ут-тайр», рассказанное языком птиц, полностью захватывает

воображение Алишера. Он будет тем, кто любит полежать от людей и любит одиночество. Его родители обеспокоены этим и прячут книгу. Но это оказывается бесполезно. Книга была полностью выучена Алишером. Идея «Логики ут-Таир» сопровождала Алишера всю жизнь. В конце жизни он написал ему ответ под названием «Лисон ут-Таир». Любимыми поэтами будущего мыслителя были Низами Гянджеви и Хусрав Дехлави. В 1453 году умер отец Алишера Гиясиддин Мухаммад. Алишер Абулкасим поступил на службу к Бабуру. Жил сначала в Сабзаворе, затем в Мешхеде. Два школьных друга – Хусейн и Алишер снова оказались вместе. Эти годы были также годами учебы и приобретения знаний для юного Алишера. Любовь к поэзии побудила Алишера к творчеству. Стихи начал писать, когда ему было 7-8 лет. В 15 лет он привлек своими стихами внимание известных поэтов своего времени. В 1457 году умер Абулкасим Бабур Мирза. Его заменил Абусаид Мирза. Хусейн Бойгаро окунулся в борьбу за престол. Навои продолжил обучение в медресе Мешхеда. Вернувшись в Хитот в 1464 году, жизнь поэта начала ухудшаться. [1] Абусаид Мирза преследует родственников претендента на престол Хусейна Бойгаро. Отец Алишера конфискует его имущество и казнит своих дядей Кабули и Гариби. Навои жил в Самарканде во второй половине 60-х годов. Есть разные причины его приезда сюда. Хондамир, историк и автор специального труда о Навои под названием "Макорим уль-Ахлак" - "Хорошие манеры", говорит, что пришел его прочитать. Захириддин Бабур сообщает, что Абусаид сослал его. Конечно, и то, и другое имеет свои причины. В любом случае Самарканд оставил неизгладимый след в его жизни. Потому что Самарканд был столицей господина Амира Темура. В его памяти остались десятки исторических памятников, мечетей, медресе, множество ученых, природная красота города. Позже в своих произведениях он описывал этот город как «рай».[2]

ОБСУЖДЕНИЕ И РЕЗУЛЬТАТЫ

В эти годы Навои приобрел большую известность как поэт. В 1465–1466 годах его поклонники собрали его стихи и создали «Девон». Эта книга известна сегодня как «Илк Деван».В 1469 году Хусейн Бойгаро взошел на трон Герата и отправил письмо в Самарканд, приглашая на свою сторону своего одноклассника Алишера Навои. Привлекает его к государственной работе, назначает тюленерам. Так, великий поэт Хусейн работал тюленем в 1469-1472 годах, а в 1472-1476 годах министром во дворце Бойкара. Он правил Астрободом в 1487-1488 годах. Хусейн Бойгаро полагался на интеллект и лояльность Навои в делах правительства. Несмотря на его сопротивление, на него полагаются высшие чины. Великий поэт получил титулы «амри кабир» (великий эмир) и «амирул мукарраб» (ближайший к царю эмир). Годы его служения были периодом расцвета благоустройства Герата и расцвета культуры. Великий эмир взял на себя инициативу по доставке воды в засушливые земли, очистил старые рвы и вырыл новые каналы. Он ремонтировал старые здания и строил новые. Сколько медресе и домов он построил. Особенно велики были его заслуги в укреплении власти Хусейна Бойгаро, обеспечении мира в стране и предотвращении борьбы за престол Тимуридов. Благодаря своему уму, мудрости и высокому статусу среди народа Хусейн Бойкара и его сыновья-князья сумели примирить многие споры и ссоры, восстановить любовь отца и сына друг к другу. Он успокоил множество беспорядков. Он был храбр в бою, талантлив в поэзии, верен в дружбе. Султан Хусейн твердо верил в Бойгаро.[3]

Поэзия и поэзия Алишера Навои превыше всего. Он не переставал творить даже находясь в служении. В 1472–1476 годах он создал два девона с названиями «Бадоъёль бидоя» («Начало искусства»), а в 1476–1483 годах «Наводирун нихойя» («Бесконечные редкости»). В 1483 году он первым написал на турецком языке «Хамсу», которую после Низами Ганкави не писал ни один другой поэт, и в очень короткий срок - за два года закончил писать «Хамсу», состоящую из пяти больших эпосов. Это «Хайрат уль-Аброр», «Фархад и Ширин», «Лейли и Меджнун», «Сабай Сайёр», «Садди Искандари». Люди науки и творчества встретили это событие с большой радостью. Абдурахман Джами Навои высоко оценил «Хамсу». Хусейн Бойгаро оседлал великого поэта на своем белом коне, остановил его и повез по улицам Герата.[4]

Возрастающее положение Алишера в глазах короля обеспокоило группу чиновников, не заботившихся о народе, Маджидуддина, начальника дворца. Они стали искать способ скрыть эмира короля с глаз долой, и им это удалось. Поэт был назначен губернатором Астработа в 1487-1488 годах и выслан из столицы. 1480-1490 годы были для Навои продуктивными в художественном творчестве. После «Хамсы» поэт создал серию прозаических произведений. В 1488 году он написал «Историю Аджама».[5]

В эти годы один за другим умерли Сайид Хасан Ардашер (1489 г.), Абдурахман Джами (1492 г.) и Пахлавон Мухаммад (1493 г.). Навои посвятил им произведения «Холати Сайид Хасан Ардашер», «Хамсат ул-мутахайирин», «Холати Пахлавон Мухаммад». Эти произведения были прозой и составлены из воспоминаний поэта о своих великих современниках.

В 1491 году поэт написал произведение «Трактат о проблеме», посвященное проблемному жанру. Он показал пути создания и решения проблемы. Во времена Навои задача писалась в основном на персидском языке. Навои – один из первых узбекских поэтов, написавших задачи на узбекском языке. На счету поэта 52 узбекские и 500 персидских задач. Одной из величайших заслуг Навои 1490-х годов было создание Хазаин уль-Маани. Этот огромный поэтический сборник, состоящий из четырех диванов, охватывал почти все лирические стихи, написанные поэтом на турецком языке. Благодаря гению Навои тюркские народы, проживающие в разных частях света, вошли в историю человечества, а духовное наследие нации заняло прочное место в мировой сокровищнице. В независимом Узбекистане понимание Навои поднялось до уровня государственной политики. Один из крупнейших регионов республики и ее центр, Государственная премия Узбекистана, Институт языка и литературы Академии наук Республики Узбекистан, Академический театр оперы и балета, Государственная библиотека Узбекистана, Самаркандский государственный университет и Именем великого поэта названы сотни других культурно-просветительских учреждений, колхозов. Алишера Навои, основоположника узбекского языка и государственного деятеля, великого мыслителя и учёного, весь турецкий народ будет помнить на протяжении веков!Навои сыграл важную роль в создании своего шедевра «Девон». Это произведение состоит из его стихов и является лучшим образцом литературы своего времени. Навои поднимал в своих произведениях человеческий дух, любовь, дружбу и социальные вопросы, выражал в своих произведениях глубокие философские мысли. Его стихи содержат глубокие размышления о многих социальных и культурных проблемах, внутреннем мире человека и смысле жизни. Навои включил в свое творчество множество жанров. Он

создавал лирические, эпические, дидактические и философские произведения. Его произведение «Хамса», состоящее из пяти эпосов, считается одним из величайших произведений узбекской литературы. В «Хамсе» Навои освещал жизненный опыт человека, любовь и дружбу, а также социальные вопросы. Это произведение является вершиной творчества Навои и оказало большое влияние на развитие узбекской литературы. За свою жизнь Навои общался со многими друзьями и наставниками. Он установил тесные дружеские отношения с такими поэтами, как Абдуррахман Джами, Пахлавон Мухаммад и Сайид Хасан Ардашер. Эти люди повлияли на творчество Навои и способствовали его творческому развитию. Навои создал произведения, посвященные своим друзьям и учителям, и эти произведения составляют важную часть его творческой деятельности. За свою творческую карьеру Навои столкнулся со многими проблемами.

Когда он был назначен губернатором Астработа в 1487-1488 годах, он был удален из столицы. В этот период Навои провел плодотворные годы в художественном творчестве. По Хамсе он создал серию прозаических произведений. В своем творчестве Навои включил множество жанров. Он также творил в проблемном жанре и считается одним из первых поэтов, написавших задачи на узбекском языке. В нем 52 узбекские и 500 персидских задач. Эти выпуски были очень популярны в свое время, а Навои был известен своими художественными способностями. Творчество Навои имеет важное значение не только в узбекской, но и во всей турецкой литературе. Его произведения не только проливают свет на социальные и культурные проблемы своего времени, но и выражают общие ценности человечества. В своих произведениях Навои глубоко анализировал внутренний мир, психику и смысл жизни. Его творчество оказало большое влияние на развитие современной узбекской литературы.[6]

Современная узбекская литература вдохновлена творчеством Навои и продолжает его традиции. Творчество Навои является основным фундаментом узбекской литературы. Идеи и мысли, отраженные в его произведениях, служат источником вдохновения для современных писателей и поэтов. Своим художественным мастерством, глубокими мыслями и общечеловеческими ценностями Навои оказал большое влияние на развитие современной узбекской литературы. Жизнь и деятельность Навои занимают особое место в культурном наследии узбекского народа. Его произведения, мысли и идеи важны не только в узбекской литературе, но и во всей турецкой литературе. Навои также известен как основоположник узбекского языка, а его творчество обогатило духовное наследие узбекского народа. В независимом Узбекистане наследие Навои поднялось до уровня государственной политики. Его именем названо множество учреждений, культурных мероприятий и научных исследований.[7]

ЗАКЛЮЧЕНИЕ

Алишер Навои оставил неизгладимый след в истории как великий представитель узбекской литературы. Его деятельность и жизнь играют важную роль в приумножении культурного наследия и духовных ценностей узбекского народа. Хотя Навои столкнулся в своей жизни со многими трудностями, он продолжал свою творческую деятельность и служил обогащению культуры своего народа. Его произведения не теряют своей значимости и сегодня и остаются предметом гордости узбекского народа.

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The Role Of Creative Thinking In The Development Of Artistic Thinking

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Abstract
This article discusses the concept of thinking, its types, and its role in human life. The author analyzes the essence of thinking and the factors influencing its development. Thinking involves processes such as reflection, analysis, problem-solving, making correct decisions, generating new ideas, and finding unconventional solutions. The article also provides recommendations for developing thinking in students and using it effectively. Additionally, the concept of thinking in Islam is also discussed.
Keywords: creative thinking, creative thinking in children, development of thinking, generating new ideas, free thinking, logical tasks, learning from mistakes, imagination and creative exercises, learning through games, personal and social development, openness to new things.

Introduction

Thinking is the highest form of human intellectual activity. Through thinking, we reflect on things and phenomena that cannot be directly perceived through our sensory organs. In general, there are internal relationships and laws in the external world that cannot be seen with the eyes or heard with the ears. These inner connections and laws are understood through thinking.

Thus, thinking refers to the mental reflection of the essential relationships and connections between things and phenomena. Perceiving the world around us is a process in which a person gains information about their environment and its events. In learning about the world, a person uses two primary methods: **sensation** and **thinking**.

Sensation is the simplest and most direct way of understanding the world. Humans perceive the external world through five main sense organs: sight, hearing, smell, taste, and touch.

For example, when you touch hot tea and your hand gets burned — this is information received through the sense of touch.

Thinking, on the other hand, allows a person to analyze information, compare, draw conclusions, and generalize. One can determine the tea is hot not just by touching it but also based on prior experience and knowledge.

Difference:

- **Sensation** – direct perception through the sense organs.
- **Thinking** – processing what we know and drawing conclusions from it.

How they work together: We receive information through sensation, and we analyze and understand it through thinking. For example, when we see a new fruit and taste it (sensation), we remember its taste and learn to distinguish similar fruits in the future (thinking).

Main Part

Thinking is a conscious mental activity through which a person understands, studies, and responds to reality. It involves analyzing phenomena, generalizing, and creating new knowledge. The ability to think and reason is a great gift granted to humans. It is what distinguishes humans from other living beings.

Thinking develops especially rapidly in children. This is due to the development of speech and their opportunity to act independently and freely. In the course of their actions, children engage in comparing, analyzing, and eventually thinking about various objects around them. Children also

have a stronger memory compared to adults.

- In **Islam**, thinking is not only a means of gaining knowledge but also a tool for spiritual growth, moral purification, and drawing closer to Allah. Every Muslim must seek true faith by understanding their inner world.
- Thinking involves not just acquiring information, but also forming one's opinion in the right direction. In Islam, it protects a person from lies and uncertainties and helps in discovering the truth.
- Moreover, thinking allows a person to confront themselves, recognize their mistakes, and learn the right lessons. Through reflection, Muslims are guided toward salvation in this world and the hereafter.

Thinking helps to apply acquired knowledge in the right way. It is a process of spiritual growth and drawing closer to Allah. It is not just about collecting information, but also about correct reasoning and discovering the truth. A Muslim, through deep thought, realizes their mistakes, learns from them, and strives not to repeat them. Thinking helps distinguish right from wrong and guides a person to make just decisions.

Creative thinking is the process through which a person generates new, original ideas and finds unconventional solutions. This process requires unique thinking, logical analysis, and the ability to see new opportunities. To do this, one must constantly learn and seek knowledge.

Imaginative thinking is the ability to create new images and ideas through imagination and fantasy. This type of thinking is the foundation of creative activity.

Key factors in developing creative thinking include creating an environment for free thought, encouraging critical thinking, and supporting new ideas.

Creative thinking is the ability to use one's inner potential fully to generate new ideas and innovations. It is important not only in science, but also in art, culture, and many areas of life.

One of the main ways to develop creative thinking in children is to allow them to think freely and generate new ideas. It is important to broaden their thinking boundaries and encourage them to express their thoughts. Conversations, expanding their worldview, and openness to new ideas play a crucial role in this development. In addition, children should be taught to learn from their mistakes. They should also be raised to be determined and enthusiastic.

To enhance creative thinking in children, it is necessary to play various games with them and engage them in solving logical and creative tasks. This helps them generate new ideas and express their thoughts freely.

Quotes

- "The eternal treasures of human thought and experience are contained in words and live forever."
— M. A. Sholokhov
- "Do you love life? Then do not waste time, for that is the stuff life is made of."
— B. Franklin
- "The word 'tomorrow' was invented for indecisive people and children."
— I. S. Turgenev
- "Any life that is well spent is a long life."
— Leonardo da Vinci
- "Proverbs are the expression of profound meaning in just a few words."
— T. Fuller

Suggestion

To develop creative thinking, we must first create an environment that fosters free thinking in children. They should be encouraged to ask questions, come up with new ideas, and express their thoughts. Schools and preschools should implement logical and creative games, problem-solving exercises, and tasks that develop imagination and fantasy. Furthermore, based on Islamic teachings, children should be taught to think honestly and morally. This helps raise a generation that is not only scientifically advanced but also spiritually enriched.

Conclusion

Thinking is the ability of a person to understand and comprehend their environment. It manifests in two primary forms: **sensation** and **thinking**. Sensation allows direct perception, while thinking processes, analyzes, and draws conclusions from that information.

Creative thinking is the ability to generate new ideas, find unconventional solutions, and express independent thoughts. To foster this, it is essential to support free thinking, openness to new ideas, and learning from mistakes.

From an Islamic perspective, thinking is not only a means of gaining knowledge but also a path to spiritual growth and understanding the truth.

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The Role Of Pedagogical Communication In Developing The Professional Qualities Of Technology Teachers

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Abstract
This article explores the development and enhancement of professional qualities in technology subject teachers, emphasizing the demands of the modern educational landscape. The author argues that a contemporary technology teacher must go beyond merely imparting knowledge and must be innovative, morally grounded, and pedagogically skilled. The discussion focuses on key professional attributes such as effective communication, ethical conduct, decision-making in challenging situations, and initiative. The paper also underscores the importance of modern pedagogical technologies, peer experience exchange, hands-on seminars, and training programs as strategic tools for enhancing teacher competence. This article serves as a methodological guide to promote professional growth among technology educators and improve the overall quality of education.
Keywords: technology subject, professional qualities, pedagogical competence, innovation, methodological approach, teacher, self-development.

Introduction

Among the key requirements of the modern education system, the professional competence, pedagogical skills, and personal qualities of the teacher occupy a crucial place. In today's world, where science, technology, and innovation are developing rapidly, it is essential to equip students not only with theoretical knowledge but also with practical skills and innovative thinking. This is particularly important for technology teachers, who are expected to develop students' knowledge and skills in areas such as modern production, fundamentals of engineering, work culture, environmental safety, and career guidance.

Technology as a subject stands out for its practical orientation. Through this subject, students develop creativity, problem-solving thinking, teamwork, design, and production skills. Such an approach requires the teacher to be constantly engaged in self-development, stay updated with technological advancements, and apply innovative teaching methods.

A teacher's professional qualities are not limited to their knowledge level but also include their ethical stance, communication culture, initiative, and openness to new methodological approaches. The role of the technology teacher has evolved today—not only as an educator but also as a motivator, mentor, advisor, and developer of engineering thinking.

From this perspective, enhancing the professional qualities of technology teachers plays a significant role not only in their teaching effectiveness but also in influencing students' future career choices, attitudes toward labor, and life goals. This article analyzes in detail the professional qualities of technology teachers, methods of developing these qualities, the effectiveness of using pedagogical technologies, and international experience-based approaches. It also provides a scientific-theoretical basis for the importance of self-development, professional development courses, interactive methods, and reflection processes in improving professional qualities.

Main Part

Modern Professional Qualities for Technology Teachers

1. **Digital Literacy and Technological Adaptability:** Today, teachers must

effectively utilize digital tools, including interactive presentations, online assessment systems, and digital learning resources.

2. **Innovative Pedagogical Approaches:** Applying innovative methods like Project-Based Learning, gamification, and flipped classrooms helps increase student engagement.

3. **Collaboration and Experience Sharing:** Teachers enhance their teaching methods through professional collaboration, including seminars, conferences, and online platforms.

Methods for Developing Professional Qualities

1. **Professional Development and Lifelong Learning:** Courses and continuous training help teachers stay up to date with new pedagogical approaches and technologies.

2. **Mentoring and Coaching Programs:** Support from experienced mentors accelerates the professional growth of novice teachers by helping them acquire practical skills faster.

3. **Online Learning Platforms:** Teachers can strengthen their knowledge and skills through flexible and convenient online courses and webinars.

Integrating Innovative Technologies into the Educational Process

1. **Use of Artificial Intelligence (AI):** AI tools like MagicSchool enable personalized teaching, real-time feedback, and monitoring of student performance.

2. **Virtual and Augmented Reality (VR/AR):**
These technologies allow students to explore topics in a visual and interactive manner, enhancing understanding.

3. **3D Printing and Robotics:** Technologies like 3D printing and robotics help develop students' engineering and design skills.

Recommendations for Teachers

- **Continuous Self-Development:** Stay informed about new technologies and pedagogical approaches.
- **Adapting to Student Needs:** Apply individualized teaching based on students' unique characteristics.
- **Use of Innovative Methods:** Try new teaching strategies to make lessons engaging and effective.
- **Utilizing Digital Tools:** Efficiently integrate digital technologies into lessons.

Professional Competence

Professional competence refers to the mastery and practical application of knowledge, skills, and abilities required for professional activity. It does not only involve acquiring individual knowledge or skills but encompasses the integration of these across various domains. Furthermore, competence requires continual enhancement of professional knowledge, learning new information, understanding important societal demands, and the ability to find, process, and apply information in practice.

Professional competence is particularly evident in:

1. Complex situations
2. Unclear or ambiguous tasks
3. Using contradictory information
4. Having an action plan for unexpected scenarios

Key components of professional competence include:

- **Special (or professional) competence**
- **Technological competence**
- **Extreme competence**
- **Psychological, methodological, informational, creative, innovative, communicative competencies**

Social competence is the ability to actively engage in social interactions and communicate effectively within the professional environment.

Special competence involves preparedness for pedagogical activity, problem-solving, realistic evaluation of outcomes, and systematic development of professional skills. This forms the basis for demonstrating other types of competence such as psychological, methodological, informational, creative, innovative, and communicative.

Personal competence refers to continuous professional growth, increasing qualification levels, and expressing internal potential in professional activities.

Technological competence involves mastering advanced technologies, tools, and techniques that enrich professional and pedagogical practices.

Extreme competence refers to the ability to make rational decisions and act effectively in emergency situations (natural disasters, technical failures, or pedagogical conflicts).

Pedagogical Mastery and Abilities

The effectiveness and success of the educational process largely depend on the teacher's pedagogical skills. In one definition, "ability" is described as an individual psychological characteristic that enables a person to easily master a specific activity.

Talented teachers often possess the following exceptional abilities:

1. Ability to perform multiple activities simultaneously (listening, observing, reading, writing, thinking, communicating)
2. Simultaneous awareness of multiple events (e.g., listening to one student while monitoring others)
3. High curiosity and a strong desire to understand even minor phenomena
4. High neurobiological activity of the brain (very little rest time, quick resolution of uncertainties)
5. Rich vocabulary and imagination
6. Strong memory (e.g., memorizing large texts such as epics in one reading)

In modern conditions, teachers are required to:

- Possess professional competence
- Continuously work on self-development
- Learn and adapt to ever-evolving knowledge
- Creatively prepare engaging and informative lessons
- Quickly process and deliver valuable information effectively to students

This requires not only pedagogical mastery but also creativity and digital competence, which are now essential in the profession.

Conclusion

In today's digital age, developing the professional qualities of technology teachers is one of the key factors in modernizing the education system. A technology teacher must not only be a subject matter expert but also an adept user of modern teaching methods and digital tools, while striving for both personal and professional growth.

Professional qualities, including knowledge, skills, and competencies, have a direct impact on the quality of the teaching process. A teacher's openness to innovation, digital literacy, creativity, and decision-making in complex situations are critical for adapting to the evolving nature of technology education.

The scientific and theoretical foundations, international experiences, and modern technologies (e.g., artificial intelligence, virtual reality, online platforms) discussed in this article highlight the immense potential in developing professional qualities of technology teachers.

Moreover, initiatives such as professional development programs, mentoring, collaborative teaching, and the implementation of advanced educational technologies are central to preparing well-rounded educators.

In conclusion, enhancing the professional qualities of technology teachers is a continuous process. It goes beyond providing new knowledge—it includes the constant self-renewal of the teacher, accountability for educational quality, and readiness to embrace innovations. This approach not only determines the teacher's professional success but also plays a decisive role in shaping students into competitive, modern thinkers.

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Innovative Approaches To The Process Of Students' Self-Education

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Abstract
This article addresses the process of self-education in the higher education system and its improvement through innovative approaches. Self-education is considered an essential factor not only for the development of students' professional competencies but also for shaping their personal and social qualities. The study analyzes the effectiveness of pedagogical technologies aimed at developing independent thinking, critical analysis, and creative approaches, including problem-based learning, contextual learning, and distance education technologies. The article highlights the increasing need for independent knowledge acquisition among students in modern education and the necessity of further improving the self-education system.
Key words: self-education, innovative education, independent thinking, professional competence, pedagogical technologies, higher education, contextual learning, distance education.

Introduction

Currently, the demand for personal development and independent learning in the education system is increasing. Self-education is an important component of the modern education system and plays a decisive role in the scientific, professional and social formation of students. The formation of independent learning skills directly affects not only academic results, but also the future success of the individual. Therefore, the introduction of innovative pedagogical approaches in the education system and the orientation of students to self-development is one of the urgent issues.

Today, special attention is paid to the issue of self-education in the educational process, and the importance of this system in training future specialists and developing innovative competence in them is increasing. A deeper understanding of the scientific foundations of self-education and the development of advanced methodologies are becoming one of the important aspects of the education system, not only improving the learning process, but also preparing the younger generation for social life. This process includes not only scientific approaches, but also the personal development of students, the formation of their moral, aesthetic and social qualities. Through the system of self-education, students achieve not only the development of professional competencies, but also the strengthening of their spiritual and moral state. Within the framework of this process, students, first of all, set themselves the goal of mastering approaches to knowledge, new methods, technologies and innovative ideas.

Literature analysis. A lot of scientific research has been conducted on the issues of self-education in the education system, and a number of methodological works have highlighted the theoretical foundations and practical significance of this process. The role of self-education and development in the upbringing of a complete person, as well as its contribution to scientific achievements, is widely covered in the works of great thinkers - Abu Nasr Farobi, Abu Rayhan Beruni, Abu Ali ibn Sino, Mahmud Kashgari and Abdullo Avloni [1].

The importance of self-education in improving professional competencies has been studied by such scientists as A. Muslimov [2], Sh. Abduallayeva [3], R.U. Davletov [4]. At the same time, the content,

essence and structure of the concept of self-education have been analyzed in detail in the studies of Russian scientists I.G. Savina [5], A.V. Reznichenko [6], V.V. Bayluk [7]. In his research, V.V. Bayluk offers new approaches to identifying new content and mechanisms for organizing the independent learning process. The author emphasizes the integrative nature of this process and notes that the basis of independent learning is the personal activity of students. He develops the concept of independent activity and considers self-awareness as a central element of this process. This approach offers new theoretical and practical solutions for organizing the independent learning process of students, giving a new direction to the development of pedagogical science.

Discussion and results. The higher education system requires independent thinking and innovative approaches. This is the basis for the development of a self-education system. In modern education, the teacher's task is not limited to delivering information, but also to developing students' independent thinking, supporting their creative approaches and creating opportunities for self-development. To effectively implement this process, various methodological approaches and tools are needed that provide students with opportunities for self-analysis, critical thinking and personal development. Self-education is not limited only to the development of scientific skills, but also serves to increase attention to social responsibility, ethics and spirituality. Through this process, students not only gain knowledge, but also form such high qualities as the ability to behave correctly in social relations, make fair and responsible decisions.

In the process of reforming the higher education system, self-education should be considered as one of the important factors. It is advisable to introduce approaches aimed at self-development through the effective organization of the educational process and the use of methods aimed at developing independent thinking in students. This will encourage each student to further expand their capabilities, acquire new knowledge and competencies. The development of general secondary, secondary specialized and vocational education in the state educational standards is also aimed at improving the system of self-education. This approach plays an important role in providing students not only with professional knowledge, but also in preparing them for life, forming them as socially active and responsible individuals. Therefore, the education system requires the creation of a comprehensive methodological system that serves the professional and personal development of students.

The process of self-education at all stages, including higher education, should serve not only to improve the professional qualifications of students, but also to educate them as useful to society, socially responsible citizens. It is possible to increase the effectiveness of the educational process through scientific coverage of self-education, its methodological foundations and its integration with modern pedagogical approaches [4].

The process of self-education is determined by the level of knowledge and skills of a person, as well as by the entire characteristics of this process. According to this approach, the student's self-education is not limited only to the development of cognitive skills, but also directly depends on his personal and social development. The student forms his intellectual and spiritual skills and, relying on them, carries out self-improvement. The level of development of this process is closely related to the formation of the student as a subject of knowledge, and each stage determines the content and effectiveness of self-education activities.

1. Initial stage. At the initial stage of self-education, students mainly strive to master knowledge and practical skills. At this stage,

they become active participants in the educational process, but it takes time and experience to adapt to real-life social conditions. The main goal of this stage is to consolidate knowledge and skills and increase the effectiveness of their application in practice.

2. Development stage. At the next stage, the student rises to a higher level in the process of self-education. He not only understands the depth of the knowledge he is learning, but also acquires the ability to apply it in various fields. At this stage, the student develops the ability to set independent goals, think critically, and self-evaluate. He also further improves his scientific and practical knowledge, strengthening his psychological and social skills. At this stage, the student relies on his own experience and, at the same time, is ready to critically evaluate his own development direction, search for new approaches, and continue his individual development.

3. Perfection stage. At this stage, self-education becomes not only part of the educational process, but also an important factor shaping the student's entire personality and interactions with society. At this stage, the student not only develops his scientific and practical knowledge, but also improves socially and spiritually. He increases the level of self-awareness and feels his place in society more deeply. Therefore, this stage strengthens the student's sense of responsibility and helps to more clearly define his duties to society. A person who has reached this stage has the opportunity to manage his own development process, and also strives to constantly self-analyze, reshape and develop new skills.

Thus, each stage of the self-education process is inextricably linked with the level of formation of the student as a subject of knowledge. These stages serve to improve the student's self-development and management skills through the growth of his intellectual, psychological and social potential. To achieve high levels of self-education, students need to consolidate their previous knowledge and skills, expand them in practice, and continue to master new information. As a result of this process, the student not only prepares for professional activity, but also achieves high results in his personal, social, and spiritual development.

Self-education technologies include problem-based and distance learning, algorithmic and heuristic approaches, contextual and modular learning, and tutoring methods. Since the main burden in the process of independent mastery of knowledge falls on the student himself, it is necessary to master these technologies perfectly in order to effectively use them. Only the complex use and harmonious combination of these methods will serve to increase the effectiveness of the self-education process.

These approaches are aimed at activating educational and cognitive activity, strengthening the relationship between students and the object of study, forming independent thinking, and placing students at the center of the educational process. Problem-based learning technology is organized based on a specific sequence of procedures:

1. Setting the task of problem-based learning by the teacher.
2. Creating a problem situation.
3. Understanding, accepting and solving the problem.
4. Studying generalized approaches in the process of mastering new knowledge.
5. Applying these approaches in solving specific problem systems.

All these stages in the process of self-education are carried out by students. The teacher's task is to give them direction, direct them to independent knowledge acquisition, problem solving.

The algorithmic approach allows for the assimilation of knowledge in the educational process based on a logical sequence. An educational algorithm is a form that describes the structure of

cognitive activity, the implementation of which determines the order of operations that lead to the solution of educational problems. In self-education, the algorithm acts as a control system, and its perfection determines the quality of the student's self-management process.

Thus, for the effective use of self-education technologies, it is necessary to deeply understand their content and use them rationally in practice. By understanding the specific features of each method and combining them, students can further develop their knowledge and skills.

Interdisciplinary integration in the process of self-education is a process of independent search by students of various disciplines and their internal relationships, generalization and systematization of knowledge. This approach serves to deepen students' knowledge and form their theoretical and practical skills.

Distance and modular educational technologies ensure the continuity of the self-education process and create the possibility of organizing it in different conditions and in different space-time intervals. Distance-module technologies serve to modify the following aspects in the process of self-education:

- development of educational modules with different purposes,
- formation of educational modules in accordance with the content of scientific knowledge,
- development of recommendations for the effective organization of self-education activities at the main stages of mastering educational modules.

Distance education is a form of education based on purposeful, media-based or partially media-based interaction between a teacher and a student, carried out independently of location and time. This form of education is implemented through pedagogically organized information technologies, in particular, telecommunications.

Conclusion. The role of education and upbringing in the development of society is incomparable, and its development and improvement through innovative approaches is a requirement of the time. The process of self-education serves to form students' independent thinking skills, improve their social and professional skills, and develop the ability to solve life problems. By effectively organizing self-education in the educational process, it is possible to support the professional and personal development of the younger generation. Therefore, the introduction of innovative technologies such as problem-based learning, distance learning, and contextual learning in the pedagogical process remains an urgent issue. The wider implementation of approaches aimed at self-education in the education system will serve to form the future generation as socially responsible, fair, and knowledgeable individuals.

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Technology Of Preparing Land For Row Sowing

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Abstract
The article presents the results of the technological process of scientific research on the preparation of land for sowing with a combined unit designed for minimal soil tillage.
Keywords: Combined unit, cotton picker, fertilizer spreader, deeploosen working element, seeds, cotton.

Introduction

The method of sowing seeds in beds is currently widely used in our Republic. In this method, after the fields are fertilized and plowed in the fall, the irregularities are leveled and chiseled, the field surface is worked with a harrow and a trowel, and then the beds are removed. In the spring, the beds are worked and seeds are sown on them [1]. Studies conducted at the Research Institute of Agricultural Mechanization have shown that when seeds are planted in beds and cotton is grown:

- the zone of soft soil where cotton roots develop increases;
- seeds are sown in soft soil that is not crushed by the wheels of tractors and agricultural machinery;
- due to the increase in the surface area of the field that receives sunlight, it allows for greater accumulation and harvesting of heat in the soil;
- since the beds are removed in the fall, pre-sowing cultivation of the land is much easier;
- in years with little rainfall, the dry soil on the pad is removed, and the seed is planted in moist soil, ensuring its germination;
- since rainwater falling on the pad flows down to its base, there is no strong compaction on the row where the seed is planted. For this reason, the plants are less likely to suffer from root rot;
- during the first tillage between the cotton rows, the likelihood of newly emerged or sprouting cotton seedlings being buried by the soil is reduced;
- fertilizers applied before planting are not applied to the entire pad, but only to the part of the pad where the seed is planted;
- the susceptibility of cotton to various diseases is reduced [2].

Literature review.

The existing technologies for preparing seeds for sowing in furrows consist of a large number of agrotechnical measures, such as fertilization, plowing, chiseling, harrowing, harrowing and furrowing, performed by separate units, and at least 2-3 types of tractors and 5-6 types of agricultural machinery and tools are used to perform them. This, in turn, leads to an increase in labor, fuel and other material costs in preparing the land for sowing, and the multiple passes of units over the field lead to soil structure deterioration and compaction of the subsoil. One of the most important ways to eliminate these shortcomings is to use combined units, combine and simultaneously carry out the technological processes performed, reduce their number and depth of cultivation, and switch to row cultivation without completely processing the subsoil.

Methodology.

Combined aggregates used in land cultivation combine several or all technological processes performed on them in one pass through the field, including the main and pre-sowing processing. This leads to a decrease in the negative impact

of tractors and agricultural machinery on the soil, as well as a decrease in fuel consumption, labor costs and other material costs, an increase in the quality and yield of work, a reduction in the duration of soil cultivation, and the preservation of moisture accumulated in it. Combined aggregates used in land cultivation combine several or all technological processes performed on them in one pass through the field, including the main and pre-sowing processing. This leads to a decrease in the negative impact of tractors and agricultural machinery on the soil, as well as a decrease in fuel consumption, labor costs and other material costs, an increase in the quality and yield of work, a reduction in the duration of soil cultivation, and the preservation of moisture accumulated in it. Currently, combined units used in land cultivation can be divided into the following groups [3,4]:

- units that perform both primary and secondary land cultivation. Such units mainly consist of a machine for primary land cultivation (roller plow, chisel plow, deep tiller) and working bodies mounted on it, which grind, level and compact the plowed or tilled field surface. Figure 1 shows the main working body of an experimental combined unit.

Figure 1. Main working bodies of the combined unit and their location

Aggregates that combine pre-sowing tillage processes. Such aggregates, when passing through the field, loosen the soil to a specified depth, level its surface, grind it, and compact it to the required level.

Results.

Such aggregates are also equipped with fertilizer spreaders, and in one pass through the field, they perform basic or pre-sowing tillage and apply fertilizer. Aggregates that perform combined tillage and sowing operations. Such aggregates consist of soil-tending and sowing machines or working bodies. Therefore, they perform combined tillage and sowing [5,6].

Discussion.

The combined aggregate developed at the Research Institute of Agricultural Mechanization is intended for use in areas where cotton stalks are uprooted or crushed and scattered on the surface of the field. The combined unit developed at the Research Institute of Agricultural Mechanization is somewhat simpler, less material and energy-intensive than other units. When using the combined unit, it was shown that labor and fuel and lubricants consumption for preparing the land for sowing seeds are reduced, and cotton yields are increased.

Conclusions.

The existing technology for preparing the land for sowing consists of many agrotechnical measures, such as fertilizing, plowing, harrowing, chiseling, and grinding, which lead to additional labor, fuel and other material costs and damage to the soil structure.

Reducing fuel consumption and other material costs in preparing the fields for sowing can be achieved by using a combined unit that performs several agrotechnical measures at once.

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Important Directions Of Preparing Future Engineers For Professional Activity

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Abstract
This article analyzes current issues related to improving the professional training of future engineers. The author argues that in engineering education, along with theoretical knowledge, practical skills, innovative thinking, ethical responsibility, and educational directions based on international standards are important. Based on the IMRAD model, the article provides an in-depth coverage of methodological approaches, empirical results, and their impact on the education system.
Keywords: engineering education, professional training, innovation, ethical responsibility, practical skills, digital literacy.

Introduction

In today's globalization and digital economy, the need for engineering professions is growing sharply. Engineering requires not only technical knowledge, but also an integrated approach, problem solving, teamwork, and an understanding of environmental and social responsibility. Therefore, training young people studying in the field of engineering in accordance with the requirements of the times has become an urgent issue. This article aims to identify important areas as a solution to this problem and scientifically substantiate their impact.

Methodology

The following methods were used in the study:

1. Analytical-methodical approach - models of engineering education in Uzbekistan and abroad were compared.
2. Expert survey - questionnaires were received from 50 engineering teachers working in higher education institutions and 100 students.
3. Practical experience - project-based training, practical exercises, and startup training were organized with the participation of students.

Results

The results of the study showed that the following main areas play a decisive role in the training of future engineers:

Direction	Found useful by students (%)	Rated as a priority by teachers (%)
Practical training	82%	90%
Innovative projects and startups	74%	80%
Ethical standards and social responsibility	58%	72%
Digital technologies and programming	88%	86%
International standards and English language teaching	69%	78%

Experimental observations have shown that students who participated in project-based work, hackathons, and startup competitions achieved high results in independently expressing their opinions and proposing practical solutions to real problems.

Analysis and discussion

Based on the results of the study, it is considered necessary to introduce the following changes in engineering education:

1. Practice-oriented teaching system - combining theoretical knowledge with real production processes.
2. Innovative teaching methods - project-based learning, problem-based learning (PBL), developing thinking through group work.
3. Increasing digital literacy - extensive attention to teaching the basics of

programming, CAD/CAM systems, and artificial intelligence.
4. Ethical responsibility and environmental awareness - technological solutions must ensure human health and environmental safety.
5. Study of international experiences - academic mobility, international cooperation, teaching practice based on foreign literature.

Conclusion

Fundamental reforms are required in the engineering education system. These reforms should serve to improve the professional training of students not only in content, but also in methodology, based on modern standards. The proposed directions can serve as an effective tool in adapting engineering education in Uzbekistan to world standards.

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Modern Trends In Developing Pedagogical Motivation Of Future Teachers

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Abstract
This article provides an in-depth analysis of the issues of forming and developing pedagogical motivation of future teachers. Motivation is one of the decisive factors in the professional formation of a person. The study analyzes the factors affecting the internal and external motivation of future teachers in modern educational conditions, foreign experience, psychological and pedagogical theories and their implementation in the national education system. Conclusions and recommendations are developed based on scientifically based methods, empirical observations, statistical results.
Keywords: pedagogical motivation, internal motive, external incentive, professional self-awareness, innovative education, future teacher.

Introduction

Introduction. Today, issues related to the quality of education are rooted in the professional potential of the teacher. The essence of this potential is closely related to the internal motivation of the teacher. In the process of preparing future teachers for the profession, the role of motivation is not only to give them knowledge, but also to form a sense of professional self-confidence and responsibility in them.

In modern psychology, motivation is the main driving force of personal development. The theories of scientists such as D. McClelland, A. Maslow, Ryan and Dessie emphasize that motivation is formed in a combination of internal and external factors. In the field of education, this combination is associated with the social significance of the teaching profession, the system of values, the appearance of the result of labor, and its status in society.

This article develops proposals based on modern methods, international experience and national practice that serve to form motivation in future teachers.

Methodology

This study is based on the following methodological foundations:

1. Theoretical analysis - psychological and pedagogical theories of motivation, foreign and national literature were studied.
2. Empirical methods - in 2024, a survey was conducted among 240 students of the 2nd-4th year of study at 3 universities (Tash State Technical University, Nizami State Technical University, Buxoro State University).
3. Qualitative analysis - semi-structured interviews were conducted with 20 teachers and 10 school practice leaders.
4. The presented data were analyzed using the SPSS program, statistical relationships and trends were identified.

Results

A series of questions and answers were conducted with the participation of students, and a survey was conducted among 250 students. Its results are presented in the table below.

Table 1.

Motivatsion omillar	“Juda muhim” deb baholaganlar (%)	“O‘rtacha” deb baholaganlar (%)	“Ahamiyatsiz” (%)
O‘qituvchilik kasbiga mehr	72%	24%	4%
Kelajakdagi barqaror ish o‘rni	64%	30%	6%
Rag‘batlantiruvchi	58%	33%	9%

stipendiyalar			
Amaliyotga asoslangan o‘qitish	85%	13%	2%
Pedagog nufuzining jamiyatda yuqoriligi	41%	38%	21%

Analyses were also conducted using the interview method. The main points identified based on the analyses:

1. Those who considered teaching as an internal calling maintained stability in motivation.
2. Common problems during school practice (neglect, uncertainty in employment) had a negative impact on motivation.
3. Social campaigns to value pedagogical activity are insufficient.

Analysis and discussion

Analyses show that the development of pedagogical motivation is carried out on the basis of:

1. Motivation and professional self-awareness

Motivation, especially internal motivation, strengthens the future teacher's ability to see himself in the profession. Based on the "Self-Determination Theory" developed by Ryan and Dessie (2000), it can be said that a person who makes a professional choice based on internal motivation is less likely to experience professional decline.

2. The impact of innovative teaching methods

Methods that help to understand teaching not only as a theoretical discipline, but also as a practical activity — PBL (Problem-Based Learning), gamification, mentoring system, micropedagogy — increase student motivation by 20–30% (according to a comparative group analysis).

3. International experience

In the experience of Finland, South Korea, and Germany, increasing the prestige of the teaching profession is a priority in the training of teachers. Teachers are encouraged through social protection, high salaries, and social recognition. In the experience of Uzbekistan, this direction is still insufficient.

4. Social motivation mechanisms

In forming motivation for the profession, approaches such as media coverage of teaching activities in social networks, and the introduction of “Teacher Reputation” indicators are important.

Conclusion

The results of the study show that motivation for future teachers is not just a choice of profession, but a sense of social responsibility, an understanding of duty to society. The following are important in the formation of internal motivation:

-professional self-awareness;
-abundance of practical training;
-the use of modern pedagogical methods;
-the application of international experience stand out as the main factors.

It is important not only to give students knowledge, but also to instill in them a love for the profession, a sense of purpose and pride in teaching.

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Socio-Educational Problems Of The Academic Mobility System And Their Solutions

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Abstract
The article reveals the importance of higher education, its significance and the importance of academic mobility in the education system.
Keywords: higher education, mobility, academic level, flexibility, efficiency

Introduction

One of the priority principles of Modern higher education is openness, flexibility and academic mobility. Through academic mobility, students have the opportunity to expand their knowledge, get acquainted with different pedagogical approaches and acquire competitive competencies. At the same time, a number of systemic, organizational and social problems are observed during the implementation of this system in the educational practice of Uzbekistan. These problems are among the main factors that hinder the full implementation of the system and increase its effectiveness.

Literature review

Weakness of coordination mechanisms between higher education institutions : Although the "Regulation on the Procedure for Implementing Academic Mobility", approved by Resolution No. 436 of the Cabinet of Ministers of the Republic of Uzbekistan dated July 22, 2021, establishes the main forms of academic mobility, the procedure for recognizing credits, and student selection criteria, the implementation of this document is not at the same level in all higher education institutions .[1] Many universities have not developed separate strategic approaches to academic mobility, there are no internal regulatory documents, and no separate persons responsible for international relations or academic mobility have been appointed. **Example:** Although about 30 students participated in the exchange program between Tashkent State Pedagogical University and Karshi State University in the 2022–2023 academic year, more than half of them reported that their post-exchange credits were not fully recognized. In this case, differences in assessment criteria and curricula were the main obstacles .[2] This example shows that subjects, assessment methods and module systems are not aligned between higher education institutions. The lack of a mechanism for automatic credit recognition creates distrust among students regarding mobility.

Analysis and results

Weakness of psychological and social support for students participating in academic mobility programs: When a student temporarily transfers to another university to study, he or she finds himself in a foreign environment. In this environment, it is not easy to adapt, establish communication, work with new teaching methods and requirements. Unfortunately, many universities do not have **psychological preparation courses, adaptation trainings, or a mentoring system** for participants in academic mobility. **Example:** In the spring semester of 2023, 14 out of 25 students who came to Andijan State University from Fergana State University reported that they were unable to integrate into the academic process. The lack of amenities in the student dormitory, access to library

[1] Resolution No. VMQ-436. "On the Procedure for Academic Mobility". Lex.uz, 2021. https://lex.uz/docs/5564055

[2] Statistical reports of the Academic Mobility Department of TDPU, 2023. https://tdpu.uz

resources, and communication with the librarian and dean's office led to their emotional disengagement.[3] This situation shows that academic mobility is not only an important factor in the organization of the educational process, but also in socio-psychological conditions. The student's inability to socially adapt to new conditions becomes an obstacle to his learning.

Insufficiently developed organizational and material and technical base: In order to effectively organize academic mobility, the receiving university should:

flexible lesson schedule,

- teachers and groups are ready to welcome,
- student accommodation, technical facilities, and library resources must be ready.

However, in many universities, mobility programs **are being implemented "as a pilot" without specific preparation or coordination.** The student finds himself in unexpected circumstances, which negatively affects his studies. **Example:** Termez State University did not develop a special class schedule for students admitted in 2022 as part of academic mobility, they were taught in existing groups, as a result of which there was confusion in the assessment system for 6 subjects. Due to the fact that the subject modules did not fully match, the credits of 8 students were only partially recognized.[4]

Academic mobility is not "coming to class for one semester", but a clearly planned **didactic project based on methodological, organizational, social** and technical readiness. This didactic project is not yet available in all universities.

Lack of information and lack of an information coordination system: Students, their parents, and in many cases even teachers do not have sufficient knowledge and information about academic mobility. Many people only learn about mobility programs from a brief announcement on the university's official website. This undermines the openness and clarity of the mobility process. **Example:** According to a survey of students participating in the 2022 academic mobility program at Samarkand State University, participants **received detailed information about mobile programs only 3-4 days before the start of classes. This** limited the opportunity for them to prepare for the necessary (textbooks, materials, choice of direction) .[5] This situation means that there is no “digital coordination” between universities. The delayed delivery of information leads to the perception of mobility as a “challenge” rather than an “important opportunity” .

Legal and financial uncertainties: Any academic mobility system should provide legal guarantees, economic convenience, and financial reinforcement mechanisms for participants. However, in the conditions of Uzbekistan, academic mobility programs for students:

travel and living expenses reimbursement;

scholarships or additional incentives;

recognition of secured credit;

The duration of study and the circumstances affecting the diploma are often resolved differently. **Example:** Although financial support for students studying abroad is provided through the El-Yurt Umidi Fund, **students participating in internal academic mobility often cover all expenses at their own expense. This** causes social inequality and makes the process inconvenient for children from low-income families.[6] This situation can lead to the perception of academic mobility as an opportunity only for the “well-off.” However, this process should be open, equal, and guaranteed for all students.

Insufficient mechanisms for monitoring and analyzing the academic mobility process: The results of academic mobility programs in Uzbek universities are usually limited to statistical forms - that is, how many students participated, how many subjects were

[3] ADU social - psychological service reports , 2023. https://adu.uz
[4] Termez DU Mobility Coordinator Information, 2022. https://tsu.uz
[5] SamDU student survey. On the mobility process . 2022. https://samdu.uz
[6] The hope of the people and the country. Fund regulations, financial conditions. https://eyuf.uz

passed. However, questions **about how this process is going, what students learned, what problems they faced, what are the dynamics of their growth** - remain open. In European universities (in particular, the Netherlands, Denmark, Slovakia), **reflective questionnaires** with students at the end of each semester on the results of academic mobility, **mentor reports, portfolios** This data is then analyzed to improve the quality of education[7]. **Recommendation:** Each higher education institution should introduce **individual reflection sheets, control diagnostics, and final experience reports for students participating in academic mobility.** Annually, according to the higher education institution **Mobility monitoring** should be compiled and submitted to the Ministry of Higher Education, Science and Innovation.

Low student motivation and choices focused on convenience rather than knowledge: Academic mobility is an opportunity to learn, gain knowledge, and grow. However, in some cases, the student **may not value** this opportunity enough. Many students go to another university with the misconception that **the exams will be easier or the requirements will be less demanding.** This undermines the essence of mobility. To participate in academic mobility in China, a student must **submit a motivational essay, stating his/her goals, plans, and expected results.** This will allow the selection of those who truly want to learn to be [8]selected. **Recommendation:** Each university should require students participating in a mobility program to prepare **a motivational statement, a statement of purpose, and an academic plan that outlines their own learning trajectory.** Such documents will help select those who are truly ready to learn.

institutional leadership and initiative in higher education institutions: Much depends on the position, strategic approach and initiative of the university leadership in implementing academic mobility. Unfortunately, in many universities, this issue is approached only at the level of the international relations department, and the rectorate or faculty dean's office does not accept this system as a strategic direction. In the Republic of Korea, each university has a “Mobility Promotion Committee”. This committee includes the rector, vice-rectors, deans and student representatives. They hold regular meetings on [9]mutual planning, monitoring and quality assessment. **Recommendation:** Each university should establish a committee on the development of academic mobility **An institutional commission** should be created. This commission will set strategic goals, coordinate student selection, expand foreign cooperation, and prepare reports.

academic mobility into an indicator of quality education: Today, academic mobility in Uzbekistan is still assessed more in an organizational form, as a statistical number. However, in order to truly develop this system, it is necessary to transform it into an integral indicator of **the quality of education.** In the rating and accreditation criteria of the Estonian Higher Education Quality Agency (EKKA), the number of mobile students in higher education institutions, their level of mastery, and their academic performance are considered one of the main quality indicators. [10]**Recommendation:** The national ranking of higher education institutions of Uzbekistan should include “the number of students participating in academic mobility and their quality mastery” as a separate indicator.

the scientific community and research institutions: Academic mobility should not be limited to the educational process alone.

[7] Dutch Ministry of Education. Monitoring International Student Mobility, 2021. https://government.nl

[8] Chinese Higher Education Mobility Policy Review. China Ministry of Education, 2020. http://en.moe.gov.cn

[9] Korean Council for University Education. Mobility Promotion Committee Model, 2022. https://kcue.or.k

[10] Estonian Quality Agency for Higher and Vocational Education (EKKA). Annual Quality Indicators Report, 2023. https://ekka.archimedes.ee

Research institutes, experimental sites, and laboratories should also be involved in this system. A student must go to another university and not only study science, but also **write a project, conduct research, and enter a scientific environment**. At Canadian universities, 40 percent of mobile students are assigned to a research project. They work with a supervisor, often writing and preparing their own paper for publication.[11] **Recommendation: It is necessary to transform academic mobility in Uzbek universities into an integrated form,** not just "attending classes", but also culminating in "conducting scientific experiments", "defending projects", and "writing articles". This will have a positive impact on the professional and scientific growth of the student.

Analysis and recommendations show that the development of academic mobility should be organized not only by organizational reforms, but also in harmony with **substantive, psychological, motivational, institutional and scientific factors. Each higher education institution should see this system as an integral part of its strategy, and students** should accept it as a means of personal and professional development. When each participant in such a system (student, teacher, management, ministry, society) clearly understands their role, academic mobility will become one of the true quality features of the higher education system of Uzbekistan.

Lack of programs aimed at increasing the level of cultural adaptation of students: Students participating in internal academic mobility come to the university where they study from another province. This means not only a geographical change, but also a cultural, social and psychological transition into a new environment. The student's feeling of being an "alien", his inability to adapt to the group, his inability to accept differences in local customs, dialects or manners weakens his motivation to study. Canadian universities have established **"intercultural communication training" for** local and international students. In such trainings, students are prepared in advance about [12]the cultural values, manners and social norms of another region. **Recommendation:** It is necessary to introduce short trainings and interactive lessons such as "intercultural communication", "behavior in a new environment", "regional social culture" as part of **adaptation weeks** for students participating in academic mobility at Uzbek universities.

Factors that make internal academic mobility lag behind foreign mobility: When academic mobility is mentioned in the Uzbek education system, foreign exchanges (Erasmus+, DAAD, Mevlana) are usually envisaged. As a result, internal mobility is often considered secondary, and students also prefer the opportunity to go abroad. This limits the exchange of experience between national educational institutions. Example: In Turkey, a special national program called **"Domestic Mobility Program"** has been developed, which finances, advertises and includes internal mobility in the evaluation system on an equal footing with foreign exchanges. [13]**Recommendation**: Separate PR, grant, motivational support and scholarship programs should be developed for internal mobility in Uzbekistan as well. It is recommended to use the same incentive mechanisms for students abroad.

Insufficient use of the scientific-scientific-innovative potential of internal academic mobility: Many students go to another higher education institution and attend regular classroom classes, but do not have access to laboratories, innovation centers, and research institutes. This keeps the mobility process at a superficial level. In many US universities, academic mobility

[11] Canadian Bureau for International Education. Integrating Research into Academic Mobility, 2022. https://cbie.ca
[12] University of Toronto. Intercultural Training Modules, 2022. https://uoft.ca
[13] Turkish Higher Education Council. Introduction of the Local Mobility Program, 2021. https://yok.gov.tr

participants are not only **assigned to classes, but also to research projects on campus,** are allowed to use faculty laboratories, and are even encouraged with a "short-term research grant" at the end. [14]**Recommendation:** It is necessary to introduce a system for conducting internal academic mobility programs not only based on classes, but also on scientific projects and mentoring. Each receiving higher education institution should involve students in practice in its most advanced areas. Gaps in the formalization of student portfolios and academic achievements: There is no official record in a single system about what subjects a student who participated in mobility studied, what projects he participated in, what competencies he developed. This hinders his/her professional activity or application to another higher education institution. Through the European Union's "Europass Mobility Document" model, each mobility participant has his/her academic and professional achievements officially confirmed by the receiving and sending universities in the form of a document. [15]**Recommendation**: Students returning from academic mobility in Uzbekistan should be given **a "Mobility Portfolio"** and **a "Certificate of Competence Acquisition"**. This document is attached to the diploma supplement and, in addition to credit recognition, formalizes academic achievements.

Weak initiatives at the faculty and department level: In most cases, academic mobility is limited to the initiative of the university leadership and the international relations department. Faculties and departments are not directly involved in this process, and there is almost no exchange of subjects or methodological materials.

In Japan, each faculty appoints **a "Mobility Facilitator" - this person prepares the subject modules** required for mobility, works with visiting students, and ensures consistency in assessments.[16] **Recommendation:** Each faculty and department should have **a mobility coordinator. This specialist** coordinates academic mobility-related educational processes within the faculty, and adapts subject plans, curriculum, and assessments for incoming and outgoing students.

The additional points outlined above show that academic mobility is not just a movement and location, but a deep didactic, psychological, cultural and scientific process. Approaches to it should also be multifaceted, networked, functional and systematized. The higher education system of Uzbekistan is currently taking significant steps in this regard, but if these efforts do not achieve **institutional stability**, the mobility system will remain superficial. Therefore, the proposals presented in this section are not only theoretical, but also offer comprehensive approaches **that have been tested in practice, based on international experience, and adapted to the national system.** Based on the analysis conducted so far, it has been determined that academic mobility is not only a component of the educational process, but also a key mechanism for the modernization of the higher education system itself. However, practice shows that the problems arising in this system cannot be solved by technical measures alone. They are deeper - **related to the philosophy of education, management culture, social consciousness, scientific approach and human factors** . Therefore, the following comprehensive approaches are also important for the full implementation of academic mobility in practice:

The role of academic mobility in human capital development needs to be reassessed: The issue of academic mobility is often approached only from the perspective of the educational process. In fact, this process plays a major role in

[14] US Department of State. Academic Research Mobility Initiatives, 2022. https://state.gov

[15] European Commission. Europass Mobility. https://europa.eu/europass/en/europass-mobility

[16] Kyoto University Mobility Integration Guidelines, 2023. https://kyoto-u.ac.jp

increasing the student's social activity, forming communicative, cultural, leadership and initiative competencies . International studies (including OECD education analyses) show that young people who participate in academic mobility are more successful in later employment, leadership positions, and entrepreneurship.[17] **Recommendation: Academic mobility in the higher education system of Uzbekistan** should be recognized not only as an educational need, but **also as a factor contributing to the formation of human capital and the innovative development of the state. Based on this approach,** it would be appropriate to include it in state strategies.

It is necessary to establish a system of psychological preparation of students for academic mobility: Many problems are related to the student's inability to adapt to the new environment, social isolation, inability to express themselves, loneliness, and loss of motivation. This negatively affects the student's learning performance. In US universities, there is a system called “Peer Integration Programs” , where mobile students are paired with local students. This provides them with social and emotional support. [18]**Recommendation: In Uzbekistan, it is necessary to assign a psychologist and mentor** to each mobility participant, introduce adaptation training, psychological tests, self-awareness and development programs. This will ensure not only academic but also emotional stability.

Conclusion. Recognition of academic mobility results in society and transformation into a social image: Today, when a student participates in academic mobility, his/her activities are not sufficiently recognized in the labor market, in society, or in academic areas. This reduces motivation. In Finland, the document issued to a mobility participant is not only a diploma supplement, but also a “certificate of competence” recognized by a separate state. Through this document, the employer clearly understands that the student has worked on himself/herself.[19] **Recommendation: In Uzbekistan, academic mobility should also be integrated into national professional qualification standards. This should** give the student an advantage not only in studies, but also in subsequent stages (employment, master's degree, grant competition) .

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[18] Harvard University. Peer Integration Programs in Student Mobility, 2021. https://harvard.edu

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Ways Of Self-Awareness And Professional Self-Development Of Future Educators

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Abstract
This article analyzes the processes of self-awareness and professional self-development among future educators. Self-awareness is considered a key factor in both personal and professional growth within pedagogical activity. The study highlights modern methods of professional development through self-assessment, reflection, and mentoring. Additionally, the importance of psychological training and innovative pedagogical approaches in enhancing personal skills and professional competencies of educators is emphasized.
Keywords: Self-awareness, professional development, pedagogical activity, reflection, self-assessment, personal growth, professional competence, psychological training, innovative methods, pedagogical skills, educational process, professional change, personal skills, teaching methods, professional mastery, self-improvement, professional growth, quality of education.

Introduction

Nowadays, the professional qualifications and personal development of educators hold significant importance in the education system. Pedagogical activity is complex and constantly changing, requiring not only knowledge and skills but also the abilities of self-awareness and professional self-development to achieve success. Self-awareness is the ability of an individual to recognize, analyze, and modify their own thoughts, emotions, and behaviors. This process is one of the main factors ensuring both personal and professional growth of the educator.

Professional self-development refers to the continuous improvement of a teacher's or educator's professional activities, mastering new pedagogical methods and technologies, and enhancing professional competencies. In modern education, these processes are closely interconnected, and their effective organization plays a crucial role in improving the quality of education.

This article analyzes the processes of self-awareness and professional self-development among future educators, highlighting modern methods applied in these processes, including self-assessment, reflection, mentoring, and psychological training, as well as their significance. Additionally, it examines how innovative pedagogical approaches contribute to improving personal skills and professional competencies of educators.

The aim is to deeply study the personal and professional growth processes of future educators and to contribute to the improvement of the educational process by identifying effective strategies. The research results confirm the importance of self-awareness and professional development in pedagogical activity and demonstrate the necessity of introducing innovations in this field.

Methodology of the Research

Issues of self-awareness and professional self-development in pedagogical activity have long been the focus of many scholars. In particular, J. Dewey's [1] theory of reflection became a theoretical foundation for educators to critically analyze their professional practice and strive for personal and professional growth. In his work Experience and Education, Dewey emphasized the importance of reflective thinking in the learning process.

Donald Schön [2] introduced the concept of "reflective practice," highlighting that educators continuously analyze their own activities and actively engage in the process of self-improvement. According to Schön,

teachers need to deeply understand their professional competencies and rely on reflective thinking aimed at solving problems that arise during the teaching process.

Additionally, Kolbs [3] experiential learning model provides future educators with a systematic approach to self-awareness and learning in practical activities. According to Kolb, learning is a continuous process involving experience, reflection, conceptualization, and experimentation, which is essential for professional skill development.

Uzbekistani scholars also pay special attention to pedagogical reflection and professional self-development. For example, N. Omanova [4] analyzes methods for developing reflective abilities of future educators, emphasizing their effective application in the educational process. According to her, reflection is a key tool for enhancing both personal and professional competencies of educators.

Similarly, S. Karimova [5] explores the processes of self-assessment and self-awareness in increasing professional competencies, stressing the importance of mentoring and psychological training in developing these skills.

At the international level, countries such as Finland, Germany, and the United Kingdom use reflective approaches and mentoring systems as primary tools to support teachers' professional growth. For instance, Finnish educators have incorporated continuous reflection and self-assessment as a regular part of their pedagogical practice (Hakkarainen) [6-7].

Research Findings and Discussion

The findings of this study indicate that self-awareness and professional self-development play a vital role in enhancing the quality of education among future educators. Self-awareness serves as a central mechanism that stimulates both personal and professional growth in pedagogical practice.

To assess attitudes and the practical application of self-reflective approaches and self-assessment among prospective educators, the research employed specially designed surveys and semi-structured interviews. Participants included third- and fourth-year students majoring in Early Childhood Education at Navoi State University.

Among the 100 respondents surveyed:

47% reported maintaining a reflective journal and noted that it helped them identify their mistakes, analyze lessons, and better prepare for future classes.

24% stated they regularly evaluated their professional strengths and weaknesses—either in writing or verbally—indicating active self-assessment behavior.

18% indicated that, based on feedback from mentors or tutors, they revised their reflective writings.

11% said they filled in a “Self-Assessment” section after weekly sessions, which helped reinforce a sense of personal responsibility.

In-depth interviews were conducted with 10 proactive students to gain deeper insights. Most emphasized that reflection boosted not only their professional competence but also their personal resilience. For example:

“Maintaining a reflective journal taught me to acknowledge my mistakes. Previously, I was sensitive to criticism, but now I see it as an opportunity to grow,” said fourth-year student M. Khasanova.

Another student shared how weekly mentor interactions and self-assessment helped them refine their teaching techniques:

“During my practicum, my mentor always asked, ‘What did you learn from this lesson? What did you change?’ Answering these questions forced me to analyze myself,” they explained.

These empirical observations reveal that self-awareness, self-assessment, and reflective journaling are becoming integral to the professional preparation of future educators. These methods enable prospective teachers to deeply analyze their performance, develop critical thinking, make independent decisions, and shape their professional identity.

Mentorship also emerged as an essential component. The experience and support provided by mentors significantly contributed not only to theoretical knowledge, but also to the development of practical competencies among young educators.

Additionally, psychological training equipped participants with critical skills such as stress management, effective communication, and conflict resolution. These competencies bolster pedagogical success and emotional stability.

Innovative pedagogical approaches—specifically reflective journals and portfolios—proved effective in enhancing self-awareness, professional analysis, and development. These methods not only reinforce theoretical knowledge but also foster deep practical reflection, independent critical thinking, and evaluative practices.

A reflective journal—used daily by prospective educators after practice, observations, or lessons—typically includes sections for:

1.Description of the activity (topic, method, student engagement);
2.What went well and what issues arose;
3.Emotional responses;
4.Areas for future improvement.

At Navoi State University, second-year Early Childhood Education students were engaged in maintaining reflective journals during practicum. After each session, they recorded their thoughts in a structured format. At the end of each week, their university mentors reviewed these journals, provided feedback and guidance. As a result, students became more aware of their mistakes, actively sought improvement, and developed self-assessment skills and reflective thinking.

A portfolio is a collection of documents, work samples, achievements, and reflections that trace a prospective educator's professional growth. Portfolios may include:

1.Personal introduction (brief bio, motivation);
2.Lesson plans and session scenarios;
3.Practicum accomplishments (photos, certificates, recommendations);
4.Reflective entries and self-assessment tables.

Throughout the semester, students maintained individual portfolios, systematically documenting all their professional activities. Mentors reviewed these portfolios monthly to assess professional growth dynamics. This approach nurtured students' sense of responsibility, self-improvement, and a culture of documentation.

In Uzbekistan's higher education institutions, the phased integration of reflection and self-assessment elements has significantly enhanced pedagogical competence and personal development. These efforts have had a marked positive impact on the quality and effectiveness of education.

However, this study revealed that to further strengthen self-awareness and professional development, continuous professional development systems for educators must be reinforced. Moreover, broader implementation and regular monitoring of innovative methods is essential.

Finally, specific strategies must be formulated to integrate mentoring, psychological training, and reflective approaches into a cohesive framework for developing both personal competence and professional competencies.

Overall, the study confirms that by systematically incorporating self-awareness and professional self-development practices into educational institutions, teacher qualifications can be enhanced, professional growth can be promoted, and educational quality can be significantly improved.

Conclusion

The self-awareness and professional self-development of future educators have become key components of the modern education system. This research has shown that personal and professional growth processes are closely interconnected, and

their effective integration plays a crucial role in improving the quality of education.

The analysis revealed that innovative methods such as reflective approaches, self-assessment, mentoring, psychological training, portfolios, and reflective journals significantly contribute to future educators' ability to understand themselves, analyze their activities, and make sound professional decisions. In particular, surveys and interviews conducted with students demonstrated an increasing sense of responsibility and independent thinking through self-reflection practices.

Moreover, a comparative study of leading international practices (e.g., Finland, Germany, the United Kingdom) and the ongoing reforms in Uzbekistan's higher education institutions highlighted the importance of systematically integrating reflective approaches into the curriculum. Reforms such as competency-based education, modular systems, and the development of psychological support services are of great importance in this regard.

Theoretical perspectives used in the study — including Dewey's theory of reflection, Schön's reflective practice, and Kolb's experiential learning model — were found to be applicable and effective when adapted to local pedagogical contexts. These approaches equip future educators not only with knowledge but also with the mindset of critical thinking, self-awareness, and readiness for continuous growth.

Thus, by developing self-awareness, future educators gain a deeper understanding of the essence of pedagogical activity. Through professional self-development, they strive for ongoing improvement. This, in turn, serves as one of the fundamental factors in ensuring quality, sustainability, and competitiveness in the education system.

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The Use Of Ideonyms In The Works Of Olmas Umarbekov

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Abstract
This article analyzes the use of ideonyms in the works of the famous Uzbek writer O‘lmas Umarbekov. It explores the origin, meaning, and linguistic function of ideonyms within the field of onomastics. The study categorizes ideonyms by their grammatical forms and discusses the deeper meanings behind these titles. Additionally, the article points out the personal or historical inspirations for some of the ideonyms used in his literary works.
Keywords: ideonym, title, artistic, semantic and linguistic features.

Annotatsiya
Ushbu maqolada mashhur o‘zbek yozuvchisi O‘lmas Umarbekov asarlaridagi ideonimlarning qo‘llanilishi tahlil qilingan. Maqolada ideonimlarning kelib chiqishi, mohiyati va onomastika fanidagi o‘rni yoritilgan. Muallif yozuvchining bir qancha asarlari sarlavhalarini tahlil qilib, ularning badiiy, semantik va lingvistik xususiyatlarini ochib beradi. Umarbekov ijodidagi ideonimlar turli tuzilmalarga ajratilib, ularning g‘oyaviy-badiiy yuklamalari tahlil qilingan. Shuningdek, adib asarlaridagi ba’zi ideonimlarning kelib chiqishi va ularning tarixiy yoki shaxsiy motivlar bilan bog‘liqligi ham ko‘rsatib o‘tilgan.
Kalit so’zlar: ideonim, sarlavha, badiiy,semantik va lingvistik xususiyat.

O’zbek tilshunosligida onomastika sohasi tez rivojlanib borayotgan sohalardan biri hisoblanadi. Onomastikaning xususiy muammolariga oid qator tadqiqotlarning yuzaga kelishi onimlarning o’rganilmagan qirralarining lingvistik mohiyatini har jihatdan tadqiq qilish vazifasini ko’ndalang qilib qo’yadi. Onomastikaning shakllanishi xususidagi asosiy ma’lumotlar jahon tilshunosligida A.B.Superanskaya, N.V.Podolskaya, B.A.Nikonov, Suprun kabi olimlarning, o’zbek tilshunosligida esa H.Hasanov , E.Begmatov , N.Oxunov, Y.I.Avlaqulov, X.Y.Maqsudova kabi olimlar ishlarida berilgan. Biz bugungi maqolamizda ideonimlar haqida to’xtalib o’tmoqchimiz. Ma’lumki, ideonimlar, biblionimlar ham tilning onomastik birliklari qatoriga kiradi. “Biblionim” yunoncha (bibliov - kitob + onoma –atoqli ot) so‘zlaridan olingan bo‘lib, “har qanday badiiy, ilmiy, diniy, siyosiy asarga berilgan nom (sarlavha); ideonim turi”, degan ma’noni bildiradi .[1] Ideonim esa yunoncha (idea - idea, g‘oya + onoma – atoqli ot) so‘zlaridan olingan bo‘lib, “ tarixiy asarlar , hujjatlar atoqli oti, artionim, biblionim , gemereonim , geortonim , dokumentonim , poetonim , xrononim, kabi atoqli ot tiplaridan biri”, ma’nolarini bildiradi [2]

Har qanday badiiy asar sarlavhasi orqali yozuvchi yoki shoir kitobxonga qaratilgan birinchi so’zini aytadi. Bu haqida taniqli rus tilshunosi A.M. Peshkovskiy shunday degan edi: “ “Kitobxon ma’lum bir asarni o‘qishga kirishar ekan , o‘sha asarning mazmuni bilan qiziqadi . Sarlavhada esa u asar mazmuniga ishorani yoki uning ixcham ifodasini ko‘radi. Demak, biror asarning sarlavhasi faqat nom bo‘lishdan boshqa yana nimanidir anglatadi”[3]. Taniqli yozuvchimiz O’lmas Umarbekov asarlariga sarlavha qo’yishga jiddiy qaragan. Adib asarlari nomlanishiga e’tibor beraylik:: “Xatingni kutaman” (1956), “Qiyomat qarz”(1976), “Yer yonganda”(1993), “Sevgim, sevgilim” (1963), “Kimning tashvishi yo’q” (1965) , “Cho’li Iroq”(1971) , “Oq qaldirg’och” (1974)

, “Urush farzandi” (1972) , “Shoshma, quyosh” (1978) , “Sevgi afsonasi”(1972) , “Changalzor qonuni”(1973) va boshqalar.

“Qiyomat qarz” hikoyasining nomlanishiga diqqatimizni qaratamiz. “Qarz” so’zining lug’aviy ma’nosi “kesish” degani. Qarz beruvchi o’z molidan bir qismini kesib (uzib) bergani bois shunday deyilgan. Qarz “kimdir foydala -nishi va qaytarib berishi uchun berilgan mablag’ “ – deya ta’riflangan.[4] Asar qahramoni Sarsonboy ota o’ziga omonat berilgan narsani qaytarish uchun yigirma yil sarson bo’ladi. Haydarali tashlab ketgan narsa faqat qarz emas, bir odamning orzu-niyatlari ham hisoblanadi.

“ Haydarali esa, otasidan bir oy keyin jo‘naganicha, bedarak ketdi. O’g‘lining o‘rtog‘ini o‘zi rayongacha kuzatib bordi. Kuzatadigan uning biron kimsasi ham yo‘q edi.Jo‘naydigan kuni Haydarali eshak aravaga ortib, ikkita qo‘y olib keldi. Shunda G’ofurdan qoraxat kelganiga yil bo‘lgan edi. — Amaki, shular sizda tursin, — dedi iymanib. — Dadam qo‘yni yaxshi ko‘rar edilar. Qaytganlarida to‘y-po‘y kilardik... Agar malol kelmasa... — Xo‘p, bo‘tam, — dedi Sarsonboy ota. — Suruvning ichiga qo‘shib yuboraman. Malol keladigan joyi yo‘q.”. [5]

Adiblar ,odatda, o’z asarlariga badiiy tus berib ,yozish uchun asos qilib olgan voqealariga ham turli to’qima qo’shimchalarni kiritishadi. Biroq “Mangu hayot bo’sag’asida “(Qizimga maktublar”) asari noodatiy bo’lib, unda adib Moskva shahrida davolanayotganida qiziga bo’lgan sog’inchlarini tasvirlagan. O’.Umarbekov asarlari tarkibida ham ideonimlarni badiiy vosita sifatida ishlatgan. “Sovg’a “ hikoyasida shunday parcha bor: *“…Shahodat xola uyga qanday yetib kelganini bilmadi. Keldi-yu, pulni kechagina o’qib o’tirgan “**Yusuf va Zulayho**”ning o’rtasiga solib,tokchaga qo’yib qo’ydi…”[6].*

“Oq qaldirg’och” hikoyasining nomlanishida esa bulg’or adabiyotining mashhur yozuvchisi Emin Pelikning ***“Oq qaldirg’och***” nomli asari sabab bo’lganini adib “Qizimga maktublar” asarida aytib o’tgan. O’.Umarbekov ijodiy merosi turli xil asarlardan tashkil topgan. Biz o’rganilgan materiallar asosida O’.Umarbekov asarlariga qo’yilgan nomlar –ideonimlarni quyidagi guruhlarga ajratish mumkin:

1.Yakka turdosh ot so’zdan iborat ideonimlar:” Yulduzlar”, “Oqsoqol” , “Hikoyalar”, ”Ko’prik” , ”Sud”, “Komissiya” .

2. Yakka atoqli ot so’zdan iborat ideonimlar:”Hadicha”, ”Charos”, “Hotamtoy”, ”Vela”.

3.Qaratqich kelishigidagi ot birikmalardan iborat ideonimlar: “Muhabbat qo’shig’I”, “”Gayduk qizi”, “Marusya xolaning miltig’I”,”Bahor nafasi”. 4.Sifatlovchi aniqlovchili ideonimlar: “Shirinsoy oqshomlari”, “Oltin yaproqlar”, “Qiyomat qarz”, “Qaytar dunyo”.

5.Uyushiq bo’laklar asosida shakllangan ideonimlar: “Ota va o’g’il”, “Fotima va Zuhra” , “Cho’pon Vasil va uning farzandlari”, “Yigit va Qiz”

6.Sodda gap shaklida qo’llangan ideonimlar: “Kimning tashvishi yo’q”, “O’zgalar uchun…””Menga ishonmaysanmi?”,”Odam bo’lish qiyin”,

7.Ko’makchili birikma shaklida qo’llangan ideonimlar: “Arizasiga ko’ra “, 8.To’liqsiz gap shaklida qo’llangan ideonimlar:”Yer yonganda..”,”Yo’lda” , “Mangu hayot bo’sag’asida…”

9.Tarkibida undalma ishtirok etgan ideonimlar: “Shoshma,quyosh” .

O’lmas Umarbekov asarlari shu kunga qadar mazmun jihatidan ,asar tili ,adibning badiiy mahoratiga ko’ra tahlil qilingan. Endi adib asarlarini keng miqyosda ideonomik tahlil qilish maqsadga muvofiq deb hisoblaymiz.

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Analysis Of The Practice Of Using Remote Banking Services In The Banking System Of Uzbekistan

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Abstract
this article is currently looking at measures to establish control in commercial banks and establish digital banks, and to change the activities of existing banking departments, that is, to improve in accordance with the principles of international rating assessment. The establishment of remote services using innovative banking technologies in local commercial banks is one of the pressing issues of today. Accordingly, the stage of digitization of services provided by commercial banks and the establishment of digital banks, full automation of commercial banking services and the creation of self-management systems for banking customers is rapidly underway. In particular, today, commercial banks of all developed countries have established a large number of customer services not by increasing the number of branches from banks as a result of the development of the digital economy, but by developing remote banking services. In the process of transformation of banks in Uzbekistan, the presence of remote banking services based on mobile, internet and other banking technologies, their level of security, minimization of risks, ease of use, importance of use, population awareness of these services, utility of services and solutions of other similar problems were considered and analyzed.
Keywords: remote banking, internet banking, Mobile banking, Banking-Client, Innovative Banking Technologies, Electronic Digital Signature (EDS).

INTRODUCTION

Currently, the era of innovative technologies requires the effective organization of business processes in commercial banks, the creation of digital banks, and the reduction of banking costs by changing and adapting the activities of existing bank branches to remote services. In this case, all banking services provided by digital banks are fully automated and self-management systems for bank customers are created. In particular, today, all operations are carried out much faster through modern technologies, and as a result of the development of the digital economy, banks are required not to increase the number of branches, but to attract and serve many customers through the development of remote banking services.

In Uzbekistan, in order to improve banking systems in accordance with the requirements of Basel III and using mobile, Internet and other innovative technologies in banking activities, ways are being used to provide banking services remotely and to minimize their security level and expected risks. Due to the convenience of using remote banking services for commercial bank customers and the importance of using the system for both (the bank and the customer), the awareness and usefulness of customers of these services, the services are analyzed econometrically based on a conceptual model [1].

Today, the concept of Internet banking in the banking system of Uzbekistan and the “Bank-Client” program are convenient and useful for legal entities, but in recent years, individuals have also been able to use the convenience provided by commercial banks, namely mobile banking. Today, bank customers prefer Internet banking to the “Bank-Client” program. The main reason for this is that the “Bank-Client” program is designed for use on a computer, and after installing this program on the computer, it is possible to use it directly from

this computer. This does not ensure the use of the program at any time and anywhere. The fact that bank customers, that is, users, cannot use this program anywhere has caused a number of inconveniences, which slows down the popularization of the “Bank-Client” program. Nevertheless, in many commercial banks, the “Bank-Client” program is considered the same type of service as Internet banking. This is the main reason why it is also recorded as a “Bank-Client” (“Internet banking”) software complex in the contract concluded between the bank and the client [2].

“Bank-Client” program The “Internet banking” software complex is an automated interaction between the bank and the client, which creates the following opportunities for bank clients:

• saves time and money due to the client not having to visit the bank every day;
• the proximity of the bank address does not matter for the client;
• individuals and legal entities who are bank clients use banking services at home, in the office or in other places using personal computers connected to the Internet;
• there will be an opportunity to expand the range of services provided to the client in the operational and information sphere;
• increases the productivity of bank employees serving clients;
• serves to ensure high-speed, high-quality and online implementation of operations.

METHODOLOGY

If we talk about the Internet banking software complex, we will analyze it as follows. First, let's look at the process of using this program: it is based on the exchange of information between the bank and the client via a communication network. To exchange information in the client banking system, a “Personal Cabinet” is created for clients in the bank. To ensure security, authorization is required, that is, access is provided via a password and login. Processing of client requests, receiving and transmitting data is carried out automatically.

For the full functioning of this system, the client's computer operating system must be newer or have a Web browser of at least Internet Explorer 6.0 or higher. The client working on the system must have knowledge and skills at the level of using the Windows operating system and Internet Explorer Web browsers.

The client and the bank exchange information through communication channels at the time agreed upon in the contract. Before starting a new day of operation in commercial banks, the client must check the movement and balance of funds in deposit accounts by comparing them with the balance of the previous day. If the funds in the accounts match the balances, the client is allowed to start a new day of operation and enter documents. Otherwise, the reasons for the difference between them are determined and this situation is mutually coordinated between the client and the bank. When settlements are made through this system, the client transfers funds from his account, mainly in the form of a payment order.

Transfers made by bank clients through communication channels in the bank, that is, settlement documents made with electronic money, are issued in two copies after the payments are made:

• one copy is placed in the daily collection of documents of the bank in the general order;
• the second copy is left at the bank until the original copies of the settlement documents are received for comparison.

The “Internet banking” software complex is the personal property of each commercial bank. This program is allowed by the bank to be used only by clients who have concluded an agreement with the bank and they are considered users of the banking program. To perform banking operations through the Internet banking software complex, the client must be provided with technical means.

In order for users of the Bank-Client program to connect to the software complex, clients are required to have:

• a computer;

• a modem and the Internet;
• a printer;
• appropriate software, that is, a special program installed by the bank for the “Bank-Client” program (Figure 1).

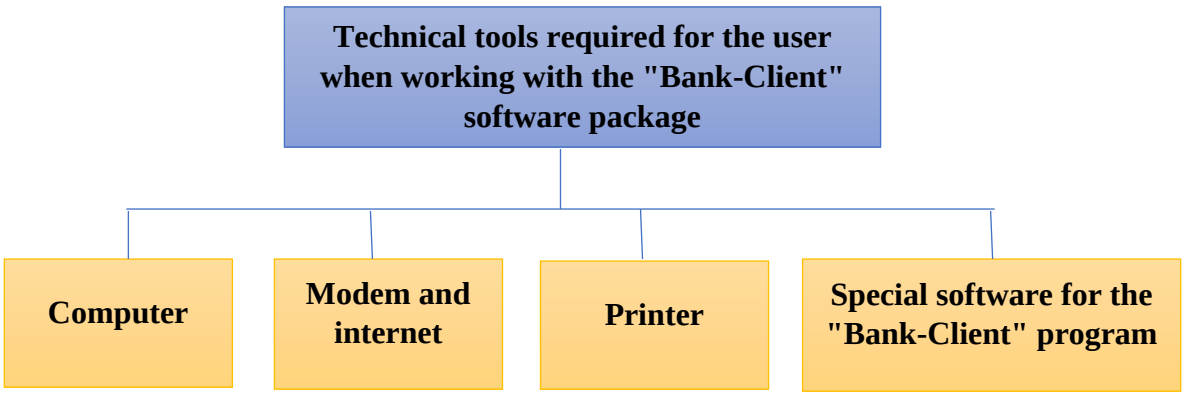

Figure 1: Special software for the “Bank-Client” program, i.e. “Internet-Bnaking”

In commercial banks, remote servicing of client accounts is carried out in accordance with the agreement concluded between the system users, that is, the client and the bank. In order for the client to perform banking operations using remote banking services, the payer (client) must provide the bank with accurate identification data (the payer's personal accounts, phone number, etc.).

The user enters a login and password to enter the bank-client system. Then he is authenticated with an electronic digital signature (EDS) and enters the system. Through the system, the client performs his operations using an electronic digital signature. An electronic payment document certified by an electronic digital signature is equated to the original copy of the monetary settlement document (i.e., paper form) and has the same legal force as it.

If a bank client loses the private key of the electronic digital signature or suspects that the identification and authentication data has been disclosed to others, the client (user) must immediately notify the bank about the termination of the service through the system. According to the bank-client agreement, the client is responsible for the transactions made from the client's accounts through the system. For security reasons, to change the password for using the system, the client selects the "Change password" button from the system menu.

Then the login and passwords, as well as the new changed password, are entered. After all the parameters are entered, the [Save] button is pressed to save the changes in the database.

RESULT

Internet banking technology creates a number of conveniences and eases for both the bank and its clients. That is, the client does not need to go to the bank to perform banking operations on his account, but rather has the opportunity to do so from anywhere and at any time via the Internet, and can receive information about the status of his bank account, the movement of funds, and the reflection of payments via the remote Internet. This provides the client with conveniences such as saving his time and financial resources, choosing the bank according to his wishes regardless of the distance or proximity of the address, and managing his funds quickly [3].

Currently, compared to other remote banking services under the Bank-Client program, mobile banking is more convenient to use, and individuals who need cash have the opportunity to make all payments in everyday life with this service [4]. A mobile phone is considered the most convenient for users. It is much more convenient to make payments online

through a mobile device than with cash, and it is safer to store electronic money. As a result, the widespread introduction of mobile banking in the payment system will reduce the cash supply and inflation rate. In this regard, it is worth highlighting the convenience, speed, efficiency, and universality of the system as the main advantages of mobile banking [5].

Figure 2 Sequence of installing the Mobile Banking application

The role of our smartphones in our daily lives is increasing. Managing our entire business activities, personal lives, and bank money through a single smartphone is the greatest convenience of the 21st century. In addition, customers do not need to use new systems or technologies to make payments. It is enough to simply download mobile applications. In this case, it is not required to provide customers of commercial banks with a separate payment instrument. Commercial banks are characterized only by:

• creating clear advantages over currently available options;

• ensuring the security of the new system based on a clear understanding of the risks associated with them.

To launch the mobile banking service, first of all, the client activates the Internet service on his smartphone and searches for the name of mobile banking in the smartphone's "Play Market" (if it is an Android smartphone) or "App Store" (if it is an Apple smartphone). Each commercial bank's program is searched for by its mobile application name and, after being found, it is installed on the phone (then the mobile banking application appears on the phone). Usually, commercial banks give their mobile banking program a special name; For example, the mobile banking program of "AloqaBank" JSC is called "Zoomrad".

Internet banking was one of the **first** in the banking system of Uzbekistan to be implemented by AITB "Ipak Yo'li" on March 1, 2007. That is, by logging into the "Ipak Yo'li online" system, customers were able to perform several types of banking operations on their deposit accounts. Initially, this service was used only by customers with the status of legal entities, but later these services were also introduced for individuals.

Second, as a bank that offered Internet banking services to its customers, JSC "Invest Finance Bank" began to show its activity in the financial market. This, of course, created a number of conveniences for the customers of this bank.

Thirdly, “Trustbank” JSC launched the use of this type of service, which was the first bank in Uzbekistan to hold presentations to bank customers in order to popularize the use of Internet banking services and was the only bank to launch such an interactive service as receiving online answers to their customers’ questions.

Then, “KDB Bank Uzbekistan” JSC offered its customers a new service and posted it on its website, and a little later, the People’s Bank of the Republic of Uzbekistan JSC also offered its customers remote banking services. This indicated that the need for

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such services among customers was growing during this period.

Later, remote banking services developed rapidly in the banking system of Uzbekistan. Determining the influence of factors influencing the use of remote banking services in Uzbekistan

To determine the influence of factors influencing the use of remote banking services in Uzbekistan, it is appropriate to use the method of linear multivariate econometric modeling. Such factors are of great importance in studying the impact of such factors on the efficiency of banking services.

A number of factors were selected as factors participating in the multivariate econometric model based on the questionnaire questions conducted among respondents. The use of remote banking services as the resulting factor was designated as (F), in the model as (Y). The following factors were considered as influencing factors: the influence of people close to me on my use of remote banking services (Xb1), the influence of advertising and information on bank websites on my use of remote banking services (Xb2), the level of convenience in using remote banking services (FQ), the occurrence of fraud in remote service systems (Xf1), the level of security of personal data in remote service systems (Xf2), the importance of remote banking services in saving time in everyday life (FA1), the importance of remote banking services in saving costs (FA2), the importance of price in using remote banking services (N1), the importance of internet speed in implementing remote banking services (N2), the level of risk in implementing banking transactions through remote banking services (R1), the level of fear of losing the list of PIN codes and falling into the wrong hands (R2), and the gender and age of the respondent.

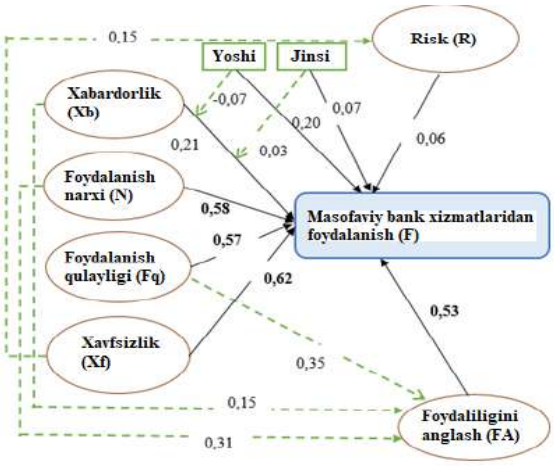

Figure 3: Conceptual model of "determinant factor" hypotheses influencing the use of remote banking services and the results obtained

Table 1. Descriptive statistics between factors

	Y	FQ (X1)	Xf2 (X2)	FA2 (X3)	N2 (X4)
Mean	1,255738	1,337705	1,213115	1,465574	1,298361
Median	1,000000	1,000000	1,000000	1,000000	1,000000
Maximum	2,000000	2,000000	2,000000	2,000000	2,000000
Minimum	0,000000	0,000000	0,000000	0,000000	0,000000
Std. Dev.	0,664050	0,730484	0,690984	0,663643	0,702086
Skewness	-0,336983	-0,617829	-0,307115	-0,854312	-0,487726
Kurtosis	2,218791	2,095204	2,099629	2,597637	2,114636
Jarque-Bera	13,52823	29,80748	15,09681	39,15810	22,05376
Probability	0,001154	0,000000	0,000527	0,000000	0,000016
Sum	383,0000	408,0000	370,0000	447,0000	396,0000
Sum Sq. Dev.	134,0525	162,2164	145,1475	133,8885	149,8492
Observations	305	305	305	305	305

The results are presented in Table 1, where the data show the mean, median, maximum and minimum values of each factor. Std. Dev. (Standard Deviation) - the standard deviation coefficient shows how much each variable deviates from the mean.

CONCLUSION

The well-established settlement mechanism in the economy and its accurate functioning are the main foundations of development in all countries. The economic power of any state cannot be imagined without a highly efficient monetary system and modern payment mechanisms. At the same time, the state is constantly interested in the implementation of any payments through banks, that is, expanding the

system of non-cash settlements, in particular, payments through remote banking services.

The importance of modern information technologies in the introduction of new banking products and services is increasing in the Uzbek banking market. As market economy relations develop in Uzbekistan, commercial banks are also diversifying their service activities by increasing the types of remote banking services and the types of services they provide to customers through them.

Currently, the use of remote banking services in the activities of commercial banks of the Republic of Uzbekistan is increasing year by year. In particular, the number of users of AT Xalq Bank, JSCB "Agrobank" and TIF National Bank is 5474994, which is more than 68 percent of the total number of users. The low number of users of remote banking services of "Hi-Tech Bank" JSCB, "ZIRAAT BANK" JSC, "Turkiston" JSCB, "Ravnaqbank" JSCB, "Madad Invest Bank" JSCB, "Uzagroexportbank" JSCB and Iranian "Soderot" Bank can be explained by the small number of their branches and clients.

External self-service devices (ATMs, infokiosks and terminals) for bank customers are becoming increasingly important in the implementation of remote banking services.

In general, the introduction of modern information technologies, new banking products and services is creating conditions for the expansion of the banking services market in the banking system of Uzbekistan. As market economy relations develop in Uzbekistan, commercial banks are also diversifying their activities by expanding retail operations and the types of services provided to customers. The introduction of each new information technology opportunity and innovative ideas related to the payment system into the banking system is leading to the emergence of new services in banks.

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Effect Of Drying Methods On The Chemical Composition Of Ginger (Zingiber Officinale) Rhizome

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Abstract
This article presents the results of scientific studies carried out between 2022 and 2024 on the “Sengang” variety of ginger (Zingiber officinale) cultivated under the soil and climatic conditions of the Namangan region. The study investigated the chemical composition of ginger rhizomes dried using three different methods — sun drying, shade drying, and artificial (convective) drying. The effects of these drying methods on moisture, ash content, fiber, and mineral elements (calcium, phosphorus, iron) were analyzed. The results provide an important scientific basis for the effective processing of ginger in the pharmaceutical and food industries, improving product quality, extending shelf life, and preserving its bioactivity.
Key words: Ginger, Sengang, Zingiber officinale, medicinal properties, agroclimate, FAO, antioxidant, amino acid, gingerol, zinc, iron, manganese, potassium, calcium, magnesium, vitamins (C, B3, B6, E, K), sun drying, shade drying, drying equipment, moisture, ash, fiber, pharmaceuticals, food industry.

INTRODUCTION

Ginger (*Zingiber officinale*) belongs to the Zingiberaceae family and originates from East and South Asia. There are 53 genera and more than 1,300 species of ginger worldwide [3]. Ginger cultivation began approximately 3,000 years ago and has become an indispensable part of many culinary dishes [4]. Ginger is produced under various agro-climatic conditions around the world. According to 2016 statistics from the Food and Agriculture Organization (FAO) of the United Nations, India, China, Nepal, Indonesia, and Thailand are among the top five ginger-producing countries. Agro-climatic conditions can influence the nutrient composition of ginger [5,9]. Ginger possesses anti-inflammatory, antioxidant, immune-supporting, and antimicrobial properties, along with other beneficial effects, all of which have been scientifically confirmed [6,7,8].

Numerous decrees and resolutions have been adopted by the President of the Republic of Uzbekistan to promote the cultivation and processing of medicinal plants within the country. Among them are Presidential Decree No. DP-139 dated May 20, 2022, “On measures for creation of value added chain by means of effective use of source of raw materials and support of conversion of herbs”[1], and Presidential Decree No. PQ-251, “On measures to organize the cultural cultivation and processing of medicinal plants and their widespread use in treatmentll and other regulatory legal acts in this area” [2]. These decrees and resolutions set out a number of tasks, including the protection of medicinal

plants, the rational use of natural resources, the cultivation and establishment of plantations of medicinal plants, further deepening of reforms in the sector, and the application of innovative technologies in agriculture, processing, and the food industry.

Ginger differs from other plants due to its unique composition. Its rhizomes contain essential amino acids required by the human body, such as valine, leucine, isoleucine, phenylalanine, and threonine. In addition, ginger is rich in powerful bioactive compounds such as gingerols and shogaols. These compounds not only help to improve health but also support the immune system. Ginger also contains important minerals such as zinc, iron, manganese, potassium, calcium, and magnesium, as well as vitamins C, B_3, B_6, E, and K. This composition makes ginger not only beneficial but also an effective aid for improving human health. Ginger is known for its strong antioxidant properties, which help neutralize free radicals in the body and serve as an effective means of combating inflammation. Therefore, ginger is widely used in pharmaceuticals, medicine, and the food industry.

Methodology.

For the research, the “Sengang” variety of ginger, cultivated under the soil and climatic conditions of our republic, was selected. This variety is known for its specific characteristics and valuable compounds. In the study, ginger was dried using different methods, and its chemical composition was analyzed. The chemical composition of the “Sengang” ginger was examined for each drying method.

Results**.** For the research, the “Sengang” variety of ginger, which grows well and produces good yields under the soil and climatic conditions of our republic, was selected. This variety stands out from others due to its high medicinal properties and adaptability to local conditions. The “Sengang” variety was studied as the research object using various drying methods (sun drying, shade drying, and drying equipment). The compositional indicators of the dried products — including moisture content, ash content, fiber content, and mineral composition — were analyzed, with the results presented in Table 1. This research has practical significance for improving drying technologies and enhancing product quality.

Table 1. Analysis of the compositional indicators of ginger under different drying methods.

Composition	Fresh Ginger	Sun Drying	Convective Drying	Shade Drying
Moisture (%)	79,2	5,66	5,3	6,96
Ash (%)	1,02	3,96	3,96	3,98
Fiber (%)	2,37	1,54	1,326	1,57
Calcium (Ca) %	0,0018	0,087	0,06	0,067
Phosphorus (P) %	0,031	0,046	0,0316	0,0396
Iron (Fe) %	0,0128	0,0247	0,0178	0,0227

According to Table 1, the compositional indicators of ginger under different drying methods were analyzed. Below is an explanation for each indicator:

Moisture content: The moisture content of fresh ginger is 79.2%, indicating that ginger retains high moisture in its natural state. Through drying processes, the moisture content is significantly reduced. In sun-dried ginger, the moisture drops to 5.66%; in convective drying, it reaches 5.3%; and in shade drying, it is 6.96%. Shade drying results in a slightly higher moisture level compared to the other methods.

Ash content: The ash content of fresh ginger is 1.02%. During the drying processes, the ash content increases significantly: 3.96% in sun drying, 3.96% in convective drying, and 3.98% in shade drying. This mainly indicates a concentration of solid substances (such as minerals) during drying.

Fiber content: The fiber content of fresh ginger is 2.37%. This indicator decreases under drying conditions. In sun drying, it is 1.54%; in convective drying, 1.326%; and in shade drying, 1.57%. This decrease in fiber content makes the ginger product structurally softer and easier to classify.

Mineral content:

Calcium (Ca): In fresh ginger, calcium is 0.0018%. During drying, this figure increases significantly to 0.087% in sun drying, 0.06% in convective drying, and 0.067% in shade drying, indicating variations depending on the drying method.
Phosphorus (P): In fresh ginger, phosphorus is 0.031%, rising to 0.046% with sun drying, 0.0316% with convective drying, and 0.0396% with shade drying, reflecting changes in mineral content during drying.
Iron (Fe): In fresh ginger, iron is 0.0128%, increasing to 0.0247% with sun drying, 0.0178% with convective drying, and 0.0227% with shade drying. The higher iron content can positively influence the bioactive properties of ginger.
In general, the drying process has a significant impact on the compositional indicators of ginger. Variations by drying method lead to a greater concentration of beneficial compounds, enhancing the useful properties of ginger.

Discussion

The results of the conducted research indicate that processing ginger rhizomes using different drying methods has a significant impact on their chemical composition. First of all, the sharp reduction in moisture content not only ensures longer shelf life of the product but also increases its microbiological stability. According to the study results, the lowest moisture content was observed in convective drying, confirming the efficiency of this method.
The increase in ash content can be explained mainly by the concentration of mineral substances during the drying process. In this regard, the increase in calcium, phosphorus, and iron elements in ginger helps to enhance its bioactive properties.
The slight decrease in fiber content positively affects the physical appearance and processing characteristics of the product, since lower fiber content facilitates grinding and standardization processes.
In addition, it can be observed that the different drying conditions (sun, shade, convective) also significantly affected the distribution of mineral elements. For example, the amounts of calcium and iron increased in many methods, further enhancing their beneficial value for health.
Based on this discussion, it can be concluded that convective drying, which is technologically controlled, can be considered the most optimal method to preserve the beneficial properties of ginger and to increase its bioactivity. At the same time, it will be important for future research to deeply study indicators such as the preservation of aromatic compounds, phenolic compounds, and the degradation of vitamins.

Conclusion.

The results of the study show that the drying process has a significant impact on the chemical composition of ginger. Different drying methods (sun drying, shade drying, and mechanical drying) alter the moisture content, ash content, fiber content, and mineral composition of ginger. During drying, the moisture content is significantly reduced, which extends the shelf life of the product. The ash and fiber contents increase during drying, improving the quality and appearance of ginger. The amounts of minerals (calcium, phosphorus, iron) also change during the drying process, enhancing the bioactive properties of the product. These changes strengthen the beneficial properties of ginger and expand its potential for effective use in the pharmaceutical and food industries. Moreover, this research has practical significance for improving ginger drying technologies, enhancing product quality, and preserving its valuable properties. In the future, these findings may serve as a basis for improving medicinal plant processing and introducing new technologies.

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A Conceptual Model For An Integrated Medical Examination Information System For Public And Private Sector Employees

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Abstract
This article presents a conceptual model of an information system based on mobile technologies, developed to monitor the health of employees in the public and private sectors and to digitalize medical examination processes. The proposed system features a user-centered architecture and includes functionalities such as planning medical check-ups, recording results digitally, delivering doctor's recommendations, and archiving. The study analyzes the system's functional modules, architecture, security approaches, and practical implementation prospects. The analysis shows that this model plays a vital role in enhancing the efficiency of medical services, simplifying workplace health monitoring, and strengthening digital health infrastructure.
Keywords: mobile technologies, medical examination, information system, conceptual model, health monitoring, public and private sector, electronic health, digital health.

Introduction

In recent years, the processes of digitalization have been extensively developing in the healthcare sector as well. In particular, the regular monitoring of the health of employees in the public and private sectors, the prevention of diseases, and the improvement of the effectiveness of preventive medical examinations have become pressing issues today. However, in the current systems, the medical examination process often becomes complicated due to excessive paperwork, inefficient coordination, and lack of integrated infrastructure.

To address this issue, the development of integrated medical examination information systems based on modern information and communication technologies — particularly mobile technologies — is of particular importance. Such systems simultaneously optimize the exchange of information among employees of public and private organizations, healthcare institutions, and insurance companies. This article proposes a conceptual model of an integrated medical examination information system based on a mobile platform and analyzes its functional capabilities, modules, advantages, and practical implementation prospects. Additionally, it provides details on the system architecture, technical solutions, and the technological components to be used.

Methodology. In the development process of the integrated medical examination information system, a conceptual approach was applied, involving the following methodological stages:

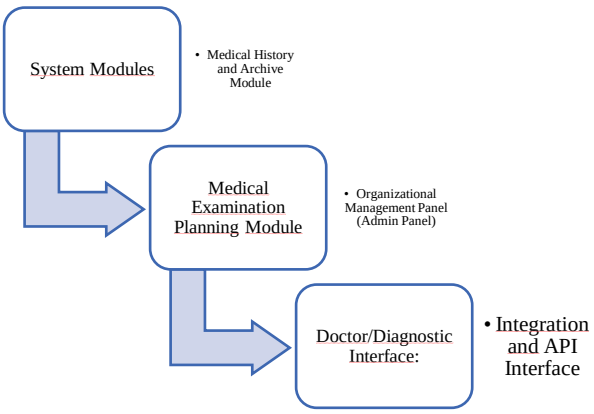
1. Analysis of System Requirements and Users: The initial stage involved identifying the main users of the system, including employees of public and private organizations (users), medical institutions (doctors, diagnostic centers), organizational managers (HR departments, healthcare units), and insurance companies.
2. Identification of Functional Needs: The specific functional needs of each user group were defined, and information flows, workflows, and data exchange schemes related to medical examinations were developed.
3. System Architecture and Technical Approach: The system architecture was designed based on a three-tier model, consisting of:

-Application Layer: Mobile application (Android/iOS platforms)
-Application Logic Layer: Backend (via RESTful APIs)

-Database Layer: Centralized cloud server (e.g., PostgreSQL or Firebase)
Through mobile devices, users can easily access their medical examination schedules, results, recommendations, and archived data. Doctors, in turn, can review users' historical data and digitally provide health-related recommendations.
4. Modeling and Conceptual Diagrams: To visually and functionally represent the system, UML diagrams were utilized:
- Use Case Diagram: Illustrates user roles and their interactions with the system
- Activity Diagram: Depicts step-by-step actions in the medical examination process
- Entity-Relationship Diagram (ERD): Shows relationships between database entities
5. Information Security and Privacy: Ensuring user data confidentiality and protection was considered a key component in system design. For this purpose, the following mechanisms were implemented:
-Authentication and Authorization Mechanisms: (OAuth 2.0)
-Data Encryption: (AES and HTTPS protocols)
- Role-Based Access Control (RBAC): Access rights defined based on user roles

System Model and Functional Capabilities

The proposed integrated medical examination information system is developed based on a conceptual model and includes convenient, secure, and functionally rich features for users. The overall system model comprises the following core components:



System Modules: User Profile Module: Stores personal data of employees, including passport details, workplace, position, medical examination dates, and medical history. It also supports quick identification via QR code.
Medical Examination Planning Module: Enables automatic scheduling of annual or quarterly check-ups, Sends reminders via SMS or push notifications to employees,
Doctor/Diagnostic Interface: Allows doctors to input examination results, analysis summaries, and recommendations digitally. Supports rapid data processing through automated diagnostic templates
Medical History and Archive Module: Stores each user's examination results chronologicallyProvides options to export data in PDF format and generate analytical graphs
Organizational Management Panel (Admin Panel): Designed for HR personnel or healthcare unit managers to monitor medical examinations, generate statistics, conduct analysis, and prepare reports
Integration and API Interface: Enables data exchange with insurance companies, medical laboratories, and other systems via open APIs

Advantages of the Model

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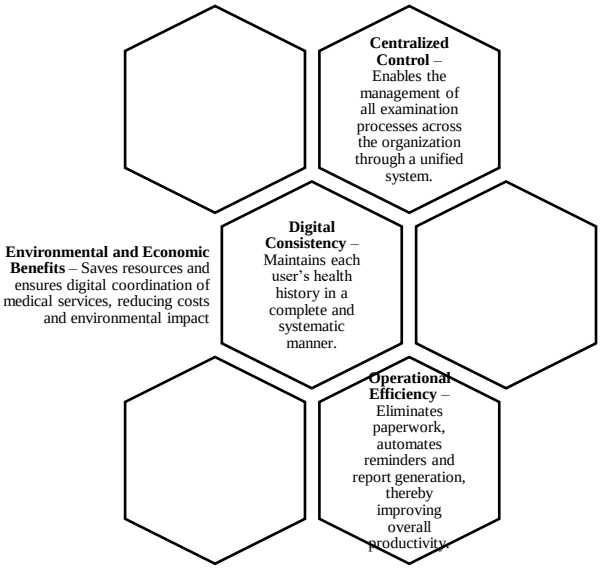

Results and Analysis

The conceptual model of the integrated medical examination information system, developed based on mobile technologies, ensures a digitalized, transparent, and systematic process for monitoring the health of employees in both public and private sectors. The analysis shows that implementing this model in practice will produce the following positive outcomes:

- **Improved Effectiveness of Medical Examinations:** Through the mobile application, employees can track their medical examination schedules, results, and doctor recommendations in real time. This increases participation rates and promotes early health monitoring.
- **Real-Time Monitoring at the Management Level:** Organization managers (HR specialists) can monitor the medical examination process in real time and make targeted decisions regarding workplace health. The system automatically generates a list of employees who missed check-ups and sends reminders.
- **Ensured Data Security and Privacy:** Authentication via OAuth 2.0, encrypted databases, and role-based access control ensure a high level of information security, which is particularly important for sensitive health data.
- **Enhanced Analytical and Statistical Capabilities:** Based on collected health data, the system automatically generates statistical reports on health dynamics, disease distribution, and health levels by age. This enables HR departments and healthcare providers to take evidence-based preventive actions.
- **Economic Efficiency:** The system helps reduce workplace losses, minimizes repeated illnesses, and contributes to creating a healthy work environment. It also reduces costs associated with paper-based reports, human error, and unnecessary repeat examinations.

Conclusion and Recommendations

This article presents a conceptually developed model of an integrated information system based on mobile technologies aimed at continuously monitoring the health of public and private sector employees and digitizing medical examinations. The proposed model incorporates a user-centered approach, modular structure, security measures, functional richness, and solutions tailored to real sector needs.

The system provides the following key advantages:

- Automation and simplified control of medical examinations;
- Centralized and continuous health monitoring for users;
- Coordinated information exchange among healthcare providers, enterprises, and insurance systems;
- Analytical tools to support strategic decision-making in healthcare management.

Recommendations:

- Pilot implementation of the system prototype in small organizations to test its functionality;
- Integration of AI-based health assessment algorithms to enhance decision-making;

- Incorporation into the national digital health platform using digital health passports and electronic medical history;
Development of a cross-platform version compatible with all types of devices.

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Liver Cirrhosis: Causes, Complications And Preparation For Transplantation

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Abstract
This article explores the etiology and major complications of liver cirrhosis, including portal hypertension, ascites, variceal bleeding, and minimal hepatic encephalopathy (MHE). Key causes such as viral hepatitis, alcoholic liver disease, NAFLD/NASH, autoimmune and genetic liver diseases are examined. Portal hypertension is discussed in terms of its clinical consequences, diagnostic methods (SAAG, ultrasound, paracentesis), and evidence-based treatment options. Diagnostic tools for MHE, such as the PHES test, EncephalApp, EEG, and treatment strategies including lactulose and rifaximin are outlined. The article also reviews liver transplantation preparation, MELD score evaluation, patient selection criteria, and psychosocial readiness. Clinical recommendations are based on up-to-date EASL and AASLD guidelines.
Keywords: Liver cirrhosis, portal hypertension, ascites, variceal bleeding, hepatic encephalopathy, liver transplantation, MELD score, PHES test, rifaximin, lactulose.

Annotatsiya
Mazkur maqolada jigar sirrozi etiologiyasi, asosiy asoratlari – xususan portal gipertenziya, askit, varikoz qon ketishlar va minimal gepatik ensefalopatiya (MHE) klinik jihatdan ko‘rib chiqilgan. Sirroz rivojlanishining asosiy sabablari sifatida virusli gepatitlar, alkogolli jigar kasalligi, NAFLD/NASH, autoimmun va genetik kasalliklar tahlil qilingan. Portal gipertenziyaning klinik oqibatlari, tashxis usullari va zamonaviy davolash yondashuvlari ko‘rib chiqiladi. Shuningdek, MHE diagnostikasi uchun PHES testi, EncephalApp, EEG kabi vositalar, hamda dori vositalari (laktuloza, rifaksimin) yoritilgan. Jigar transplantatsiyasiga tayyorgarlik, MELD bahosi, bemor tanlash mezonlari va transplantatsiyaga psixososial tayyorgarlik jarayonlari keng yoritilgan. Maqola EASL, AASLD kabi yetakchi gepatologik tashkilotlarning amaliyot yo‘riqnomalariga tayangan.
Kalit so‘zlar: Jigar sirrozi, portal gipertenziya, askit, varikoz qon ketish, gepatik ensefalopatiya, transplantatsiya, MELD, PHES testi, rifaksimin, laktuloza.

jigar sirrozi - jigarning surunkali rivojlanib boradigan kasalligi; bunda jigar to‘qimasi yallig‘lanib, uning bir qismi biriktiruvchi to‘qima bilan almashinadi. Jigarning o‘tkir yallig‘lanishi gepatitda, uning B, C, D shakll larida, o‘tkir gepatit surunkali gepatitga aylanayotganda, bezgak, sil, zaxm, brutsell yoz kabi yuqumli kasalliklarda, o‘t pufagi va o‘t yo‘llarining surunkali yallig‘lanishida, turli kimyoviy moddalardan muntazam zaharlanishda,shuningdek, alkogolizmda va boshqa sabablarga ko‘ra paydo bo‘ladi. Jigar sirrozi — sekin rivojlanadigan surunkali kasallik. Jigar sirrozi turlicha namoyon bo‘ladi va u xastalikning qaysi shaklida kechishi hamda davriga bog‘liq; tekshirganda jigarning qattiqlashgani va funksiyasining buzilganligiga qaramay, kishi uzoq vaqt hech qanday xastalik alomatini

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sezmay yurishi mumkin. Kasallik zo‘rayganda bemor darmonsizlanadi, ozib ketadi, ishtahadan qoladi, kekiradi, ko‘ngli ayniydi, ba’zan qusadi, ichi ketadi yoki qotadi, qorni dam bo‘ladi, tana xarorati ko‘tariladi, qorin bo‘shlig‘ida suyuqlik to‘planishi natijasida u ko‘tariladi (istisno), burni qonaydi, badani qichishadi, ba’zan sarg‘ayadi; kamqonlik avjiga chiqadi; jigari va ayniqsa talog‘i kattalashadi va qattiqlashadi.

Davoni vrach tayinlaydi. Jigar sirrozi uzoq vaqt davolanadi, kasallik zo‘rayganda bemorni darhol kasalxonaga yotqizish kerak. Parhezga qat’iy rioya qilishning ahamiyati katta. Bemorga, asosan, yengil hazm bo‘ladigan, qand, oqsil va vitaminlar (ayniqsa, C vitamin va B gruppa)ga boy sutli va o‘simlik ovqatlar beriladi. Tvorog (oson hazm bo‘ladigan oqsillarga ega), yog‘siz go‘sht, baliq, shuningdek, ozgina sariyog‘ bilan qaymoq yoki smetana iste’mol qilish mumkin; spirtli ichimliklar ichish qatiy taqiqlanadi. Jigar sirrozining avj olishiga yo‘l qo‘ymaydigan dorilar buyuriladi. Jigar sirrozini davolashda avvalo unga sabab bo‘ladigan omillarni bartaraf etish muhim. Jigar sirroziga olib kelgan infeksiya aniqlansa, uni tugatish choralari ko‘riladi. Jigar sirrozining oldini olish uchun mehnat va turmush sharoitini sog‘lomlashtirish, alkogolizmga qarshi kurash olib borish kerak[1].

Jigar sirrozi simptomlari

[tahrir | manbasini tahrirlash]

1. Ba’zi-ba’zida o’ng qovurg’alar ostida paydo bo’ladigan og’riq. Og’riq ko’pincha jismoniy zo’riqishdan yoki qovurilgan, yog’li taomlar va alkagol iste’molidan keyin kuchayadi.
2. Og’izda achchiq ta’m va quruqlik hissi paydo bo’lishi, ayniqsa tong vaqtida.
3. Odamni surunkali ich ketishi va kuchli qorin dam bo’lishi (meteorizm) bezovta qiladi
4. Bemor birmuncha vazn yo’qotadi, tajang va tez charchaydigan bo’lib qoladi.
5. Kasallikning ba’zi formalari, masalan postnekrotik sirroz dastalabki bosqichni o’zidayoq yaqqol alomat teri sariqligini chaqiradi.

Epidemiologiya

Iqtisodiy jihatdan rivojlangan mamlakatlarda jigar sirrozi 35-60 yosh oralig’ida bo’lgan bemorlar o’limining 6 asosiy sabablaridan biri bo’lib, har 100 ming aholi soniga 14-30 ta kasallanish holati to’g’ri keladi. Har yili dunyoda gepatit B virusini tashish fonida rivojlangan virusli jigar sirrozi va gepatosellyulyar karsinoma tuyfali 40 million kishi vafot etadi. MDH mamlakatlarida jigar sirrozi aholining 1 foizida uchraydi.

Kasallik ko’pincha erkaklarda kuzatiladi: xasta erkaklar va ayollar nisbati o’rtacha 3:1 ga teng. Kasallik har qanday yosh guruhlarida rivojlanishi mumkin, lekin ko’pincha 40 yoshdan keyin.

Etiologiya

Ko’pincha jigar sirrozi uzoq muddat alkogol bilan intoksikatsiyalanish (turli ma’lumotlarga ko’ra, 40-50% dan 70-80% gacha), parazitar infektsiya va virusli B, C va D gepatitlari (30-40%) fonida rivojlanadi. Sirroz rivojlanishining kamroq kuzatiladigan sabablari — o’t yo’llari kasalliklari (jigar ichi va tashqarisida), dimlanishli yurak yetishmovchiligi, turli kimyoviy moddalar (gepatotoksinlar) va dorilar bilan zaharlanish (intoksikatsiya). Sirroz shuningdek modda almashinuvining **genetik buzilishlari** (gemoxromatoz, gepatolentikulyar degeneratsiya, α_1-antitripsin yetishmovchiligi) va darvoza venasi tizimidagi okklyuzion jarayonlar (*fleboportal sirroz*) mavjudligida ham rivojlanishi mumkin.

Infektsion omillar orasida: surunkali virusli gepatitlar, ayniqsa, B va gepatit C, parazitar infektsiyalar, ayniqsa, zamburug’li va trematodozli (shistosomoz, opistorxoz, kandidoz, aspergillyoz). Jigarning birlamchi biliar sirrozi asosan hech qanday sababsiz yuzaga keladi. Taxminan 10-35% bemorlarda etiologiya noaniqligicha qolmoqda.

Tasnifi

Morfologik tasnifi

Jahon gepatologlari uyushmasi (Acapulco, 1974) va JSST (1978) tomonidan taklif etilgan.

- Kichik tugunli yoki kichik nodulyar sirroz (tugunlar diametri 1 mm dan 3 mm gacha);
- Yirik tugunli yoki yirik nodulyar sirroz (tugunlar diametri 3mm dan katta);
- To'liq bo'lmagan septal shakl;
- Aralash shakli (bunda turli kattalikldagi tugunlar kuzatiladi).

Etiologik tasnif

Sirrozning quyidagi shakllari ajratiladi:

- Virusli;
- Alkogolli;
- Dori-darmonli;
- Ikkilamchi biliar;
- Tug'ma, quyidagi kasalliklar bilan:
- gepatolentikulyar degeneratsiya
- gemoxromatoz
- a_1-antitripsin tanqisligi
- tirozinoz
- galaktozemiya
- glikogenozlar
- Turg'un yoki kognestiv (qon aylanishi yetishmovchiligi);
- Badda-Kiari sindromi va kasalligi;
- Almashinuv-alimentar, quyidagi holatlarda:
- aylanib o'tuvchi ingichka ichak anastomozi qo'yilishi
- semizlik
- qandli diabetning og'ir shakllari
- Noaniq etiologiyali jigar sirrozi:
- kriptogen
- birlamchi biliar
- hind bola.

Jigar sirrozi rivojlanishi sabablari

Ko'p oy va yillar davomida gepatotsitlarning genomi o'zgaradi va patologik o'zgargan hujayralarning kloni yaratiladi. Natijada immun-yallig'lanish jarayoni rivojlanadi.

Sirroz patogenezining quyidagi bosqichlari ajratiladi:

1. **Etiologik omillar ta'siri**: viruslarning sitopatogen ta'siri, immun mexanizmlar, gepatotoksik sitokinlar, xemokinlar, prooksidantlar, eykozonoidlar, atsetaldegid, temir, lipidlarning perekisli oksidlanishi mahsulotlari ta'siri;
2. **Ito hujayralari funktsiyasining faollashishi**, bu perisinusoidal fazoda ortiqcha biriktiruvchi to'qima o'sishi va jigarning perisellyulyar fibroziga olib keladi;
3. **Sinusoidlar kapillyarizatsiyasi** va gepatositlarning ishemik nekrozi rivojlanishi bilan tomir bo'shlig'ining torayishi natijasida jigar parenximasining qon bilan ta'minlanishi buzilishi;
4. **Gepatotsitlarning sitolizi immun mexanizmlarining faollashishi**.

Gepatositlarning ko'priksimon nekrozida shikastlanish hududiga T-limfositlari jalb qilinadi, ular esa fibroblastsimon xususiyatlarga ega bo'ladigan *Ito hujayralari*ni faollashtiradi: u hujayralar I tipdagi kollagen sintez qiladi va bu o'z navbatida oxir-oqibat fibrozga olib keladi. Bundan tashqari, jigar parenximasida mikroskopik darajada markaziy venasi bo'lmagan soxta segmentlar hosil bo'ladi.

Jigarning alkogolli sirrozi. Bosqichlari: o'tkir alkogolli gepatit hamda fibrozli va mezenximal reaktsiyali jigar distrofiyasi. Eng muhim omil — alkogolning to'g'ridan-to'g'ri toksik ta'siri, shuningdek, autoimmun jarayonlar oqibatida gepatotsitlarning nekrozi.

Jigarning virusli sirrozi. Muhim omil organizmning o'z to'qimalariga immunositlarning sensibilizatsiyasi hisoblanadi. Autoimmun reaktsiyaning asosiy nishoni jigar lipoproteidi hisoblanadi.

Kongestiv (dimlanishli) sirroz. Gepatosit nekrozi gipoksiya va venoz dimlanish bilan bog'liq.

Portal gipertenziya — jigar ichki yoki tashqi portal tomirlarining obstruktsiyasi bilan chaqirilgan jigarning portal vena tizimida bosimning ortishi rivojlanadi. Bu qonning portokaval shuntirlanishi, splenomegaliya va astsit (sirrozda qorin bo'shlig'ida suyuqlik (suv) to'planishi) shakllanishiga olib keladi. Trombotsitopeniya (taloqda trombotsitlarning kuchli depolanishi), leykopeniya, shuningdek ertitrositlarning yuqori gemolizi tufayli anemiya, splenomegaliya bilan bog'liq bo'ladi. Astsit diafragma harakatchanligining cheklanishi,

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peptik eroziya bilan gastroezofageal reflyuks, qizilo'ngach venalarining varikoz kengayishidan yaralar va qon ketishlar, qorinparda churrasi, bakterial peritonit, gepatorenal sindromga olib keladi. Jigar sirrozi bo'lgan bemorlarda ko'pincha gepatogen ensefalopatiyalar kuzatiladi.

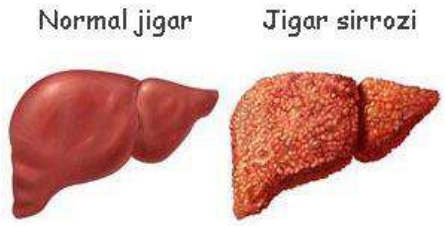
Jigarning birlamchi biliar sirrozi. Asosiy o'rin immunoregulyatsiyaning genetik buzilishlariga tegishli. Dastavval biliar epiteliyning buzilishi va undan keyin kanalchalar segmenti nekrozi sodir bo'ladi, keyinchalik esa ularning proliferatsiyasi: bu o't suyuqligi ekskretsiyasi buzilishlari bilan kechadi. Jarayonning bosqichlari quyidagilar:

- Surunkali yiringsiz destruktiv xolangit;
- Safro kanalchalari destruktsiyasi bilan duktulyar proliferatsiya;
- Safro kanalchalarining chandiqlanishi va kichrayishi;
- Xolestaz bilan yirik tugunli sirroz.

Birlamchi biliar sirrozning patalogoanatomik tasviri epiteliyning limfotsitlar, plazmatik hujayralar, makrofaglar bilan infiltratsiyasini o'z ichiga oladi.

Laboratoriya tadqiqotlari bilan antimitoxondrial antitanalar (AMA) aniqlanadi, eng xoslari — piruvatdegidrogenazaning E2 subbirligiga qarshi yo'naltirilgan M2-AMA, IgM zardobning ortishi. Bundan tashqari, immunitet tomonidan bilvosita chaqirilgan jigardan tashqari namoyon bo'lishlar — Xashimoto tireoiditi, Shegren sindromi, fibrozlovchi alveolit, tubulointerstitsial nefrit, seliakiya, shuningdek, revmatik doira kasalliklari bilan birlashib — tizimli sklerodermiya, revmatoid artrit, tizimli qizil volchanka (yuguruk) ham ajratiladi.

Jigar sirrozi alomatlari



Jigardan tashqari bo'lgan ko'plab alomatlar darvoza venasi tizimida bosimning ortishiga olib keladigan sinusoidlarda bosimning ko'tarilishi bilan bog'liq. Shuningdek xarakterli alomati «Meduza boshi» — oldingi qorin devori venalarining qon bilan to'lib ketishidir.

Sirroz uchun umumiy alomatlar xarakterli: zaiflik, mehnat qobiliyatining pasayishi, qorinda yoqimsiz tuyg'ular, dispepsik buzilishlar, tana haroratining ko'tarilishi, bo'g'imlardagi og'riq, shuningdek meteorizm, qorinning yuqori yarmida og'riq va og'irlik hissi, ozib ketish, asteniya. Tekshiruvda jigarning kattalashganligi, uning yuzasi zichlashganligi va deformatsiyasi, chetlarining xuruji aniqlanadi. Dastavval jigarning har ikki bo'lagining bir tekis, mo'tadil kattalashishi qayd qilinadi, keyinchalik esa, qoida tariqasida, chap bo'lagining kattalashishi ustunroq bo'ladi. Portal gipertenziya taloqning biroz kattalashishi bilan namoyon bo'ladi.

Yoyiq klinik tasvir jigar-hujayraviy yetishmovchilik va portal gipertenziya sindromlari bilan namoyon bo'ladi. Qorin damlanishi, yog'li ovqatni va alkogolni ko'tara olmaslik, ko'ngil aynishi, qayt qilish, ich ketishi, og'irlik hissi va qorin og'rig'i (asosan o'ng qovurg'a ostida) ham kuzatiladi. 70% hollarda gepatomegaliya aniqlanadi, jigar zichlashgan, chetlari o'tkir bo'ladi. Bemorlarning 30% da palpatsiyada jigar yuzasi tugunli ekanligi qayd qilinadi., 50% da esa splenomegaliya.

Subfebril isitma, jigar orqali u zararsizlantira olmaydigan ichak bakterial pirogenlari o'tishi bilan bog'liq bo'lishi mumkin. Isitma antibiotiklarga chidamli bo'lib, faqat jigar funktsiyasi yaxshilanganida o'tib ketadi.

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Tashqi belgilar ham bo'lishi mumkin — palmar (kaft) yoki plantar eritema, tomirli yulduzchalar, qo'ltiq va qov sohasida tuklar miqdorining kamligi, tirnoqlarning oqligi, erkaklarda giperestrogenemiya oqibatida ginekomastiya rivojlanishi. Ba'zi hollarda barmoqlar «baraban tayoqchalari»ga o'xshaydi.

Kasallikning terminal bosqichida 25% hollarda jigar hajmining kichrayishi qayd qilinadi. Shuningdek, sariq kasallik, astsit, gipergidratatsiya tufayli periferik shishlar (avvalo oyoq shishishi), tashqi venoz kollaterallar (qizilo'ngach, oshqozon, ichak venalarining varikoz kengayishi) ham sodir bo'ladi. Venalardan qon ketishi ko'pincha o'limga olib keladi. Ba'zan gemorroidal qon ketishlar kuzatiladi, lekin ular kamroq intensiv bo'ladi.

Entsefalopatiya ham jigar-hujayraviy, ham portal-jigar yetishmovchilik natijasi bo'lishi mumkin.

Asoratlari

- Jigar komasi;
- Qizilo'ngachning varikoz kengaygan venalaridan qon ketishi;
- Darvoza venasi tizimida tromboz;
- Gepatorenal sindrom;
- Jigar saratoni shakllanishi — gepatosellyular karsinoma;
- Infektsion asoratlar — pnevmoniya, astsitda «spontan» peritonit, sepsis.

Tashxis

Kasallik uchun ishqorli fosfataza, ALT, AST faolligining ortishi, leykotsitoz xarakterlidir. Bu qonni biokimyoviy tahlil qilishda aniqlanadi. Gepatolienal sindromda leykopeniya, trombotsitopeniya, anemiya va suyak iligida hujayraviy elementlarning ortishi bilan namoyon bo'ladigan gipersplenizm rivojlanishi mumkin.

Kengaygan va shoxlangan venoz kollaterallar angiografiya, kompyuterli tomografiya, ultrarovushli tekshiruv yoki jarrohlik aralashuvi davomida ko'rinadi. Kerak bo'lgnda jigar MRT va jigar tomirlari dopplerometriyasi o'tkazilishi mumkin.

Chayld-Pyu bo'yicha jigar yetishmovchiligi og'irligini baholash shkalasi

Jigar sirrozida jigar hujayralari funktsiyasi Chayld-Pyu bo'yicha baholanadi.

Parametr	Ballar		
	1	2	3
Astsit	Yo'q	Yengil, davolasa bo'ladi	Rivojlangan, davolash qiyin
Ensefalopatiya	Yo'q	Yengil (I—II)	Og'ir (III—IV)
Bilirubin, mkmol/l (mg%)	34 dan kam (2,0)	34—51 (2,0—3,0)	51 dan yuqori (3,0)
Albumin, g	3,5 dan ko'p	2,8—3,5	2,8 dan kam
PTV, (soniya) yoki PTI (%)	1—4 (60 dan ko'proq)	4—6 (40—60)	6 dan ko'proq (40 dan kamroq)

Sirroz sinfi barcha ko'rsatkichlar bo'yicha ballar yig'indisiga qarab o'rnatiladi. Ballarning yig'indisi 5-6 bo'lganida A sinf, 7-9 bo'lganida B sinf, 10-15 bo'lganida esa C sinf teb tasniflanadi.

A sinf bemorlarning hayoti davomiyligi 15-20 yilni tashkil etishi kutiladi, qo'rin bo'shlig'iga jarrohlik aralashuvida operatsiyadan keyingi o'lim ko'rsatkichi — 10%. B sinf jigar ko'chirib o'tkazish uchun ko'rsatma hisoblanadi; bunda qo'rin bo'shlig'iga jarrohlik aralashuvida operatsiyadan keyingi o'lim ko'rsatkichi 30 foizni tashkil etadi. C sinf bemorlarning umri davomiyligi 1-3 yil bo'lishi kutilib, qo'rin bo'shlig'iga jarrohlik aralashuvida operatsiyadan keyingi o'lim ko'rsatkichi — 82%. Chayld-Pyu mezoni asosida jigar transplantatsiyasi zarurligi baholanadi: C sinfiga oid bemorlar uchun o'ta zarur, B sinf uchun — o'rtacha va A sinf uchun — past.

SAPS mezonlari tizimi

So'nggi yillarda, oshqozon-ichak qon ketishi, koma, sepsis va boshqa asoratlar rivojlanish vaqtida bemorlarda prognozni aniqlash uchun asosiy fiziologik parametrlarni o'z ichiga oluvchi SAPS (*Simplified Acute Physiology Score*) mezonlar tizimi ishlatilmoqda. Tabaqalanishda bemorning yoshi, yurak qisqarishlari soni (YQS), nafas olish tezligi, sistolik arterial bosim, tana harorati, diurez, gematokrit, qonda leykotsitlar, mochevina, kaliy, natriy va plazma bikarbonatlari

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miqdori, shuningdek jigar komasi bosqichi qiymatga ega.

SAPS tizimi boy'icha baholash mezonlari

Baholash birligi	Ballar								
	4	**3**	**2**	**1**	**0**	**1**	**2**	**3**	**4**
Yosh, yillarda					≤45	46-55	56-65	66-75	>75
YQS, daqiqasiga	≥180	140—179	110—139		70-109		55-69	40-54	<40
Sistolikarterial bosim, *mm sim. ust.*	≥190		150—189		80-149		55-79		<55
Tana harorati, ºC	≥41	39,0-40,9		38,5-38,9	36,0-38,4	34,0-35,9	32,0-33,9	30,0-31,9	<30
Nafas olish tezligi, daqiqasiga	≥50	35-49		25-34	12-24	10-11	6-9	*O'SV yoki HDMB	<6
Siydik miqdori, *l/sut*			≥5,00	3,50-4,99	0,70-3,49		0,50-0,69	0,20-0,49	<0,2
Qondagi mochevina, *mmol/l*	≥55	36 −54,9	29 −35,9	7,5 −28,9	3,5 −7,4	<3,5			
Gematokrit, %	≥60,0		50,0-59,9	46,0-49,9	30,0-45,9		20,0-29,9		<20,0
Leykotsitlar miqdori, $\times 10^9$/l	≥40		20,0-39,9	15,0-19,9	3,0-14,9		1,0-2,9		<1
Qondagi glyukoza, *mmol/l*	≥44,4	27,8-44,3		13,9-27,7	3,9-13,8		2,8-3,8	1,6-2,7	<1,6
Qondagi kaliy, *mEkv/l*	≥7,0	6,0-6,9		5,5-5,9	3,5-5,4	3,0-3,4	2,5-2,9		<2,5
Qondagi natriy, *mEkv/l*	≥180	161—179	156—160	151—155	130—150		120—129	110—119	<110
HCO_3, *mEkv/l*		≥40		30,0-39,9	20,0-29,9	10,0-19,9		5,0-9,9	<5,0
Glazgo shkalasi, ballar					13-15	10-12	7-9	4-6	3

HDMB — havoning doimiy musbat bosimi, O'SV — o'pkani sun'iy ventilyatsiyasi.

Tashxisni shakllantirish

Tashxis quyidagi sxemaga muvofiq amalga oshiriladi:

Asosiy:

- Jigar sirozi;
- Morfologiya (agar mavjud bo'lsa), etiologiya;
- Faolligi, Chayld-Pyu shkalasi bo'yicha sinfi, kompensatsiya bosqichi.

Asoratlari:

- Portal gipertenziya.
- Mavjud sindromlar (astsit, qizilo'ngachning varikoz-kengaygan venalari (kengayish darajasi));
- Gipersplenizm (darajasi);
- Ensefalopatiya (etiologiyasi, darajasi, bosqichi…).

Jigar sirrozini davolash

Jigar sirrozini davolash dorilar qabul qilish va qat'iy parhezga amal qilish hisoblanadi, biroq, rivojlanib bo'lganda ortga qaytmaydigan holat hisoblanadi: bunday holatda jigarni davolab bo'lmaydi, bemor hayotini saqlab qolishning yagona yo'li — jigar ko'chirib o'tkazishdir. Kuchli astsitda qorindan suyuqlikni chiqarib olish amalga oshirilishi mumkin.

Profilaktik choralar

- O'tkir virusli gepatit bilan kasallanishni oldini olish;
- Spirtli ichimliklardan voz kechish;
- Gepatotoksik preparatlardan himoyalanish.

Parhez

Jigar sirrozida parhez to'laqoni bo'lishi, o'zida 70-100 g oqsil (1 kg tana massasiga 1-1,5 g), 80-90 g yog'lar (ulardan 50 foizi o'simlik asosli), 400-500 g uglevodlar saqlashi kerak. Bemorning odatlarini, oziq-ovqatlarni ko'tara olishi va ovqat hazm qilish tizimining boshqa kasalliklari mavjudligini hisobga olish kerak. Taomnomadan kimyoviy qo'shimchalar, konservantlar va toksik masalliqlar chiqarib tashlanadi. Parhez portal gipertoniya asoratlari mavjud bo'lganda o'zgaradi.

Ursodezoksixol kislotasi

Biliar yetishmovchilik tomonidan chaqirilgan ichakda o't kislotasi yetishmovchiligi o'rnini bosish uchun ursodezoksixol kislotasini (UDXK) qo'llash maqsadga muvofiqdir. Dozirovka — kuniga 1 marta, kechqurun, bemorning har 1 kg vazni uchun 10-15 mg, bu ovqat hazm qilish jarayonlarini tiklashga yordam beradi. UDXK ning ta'siri quyidagilarni o'z ichiga oladi:

1. Ichakka oshqozon osti bezi va o't suyuqligi tushishi miqdorining ortishi;
2. Jigar ichi xolestazining yakunlanishi;
3. O't pufagi qisqarishining kuchayishi;
4. Yog'larning saponifikatsiyasi va lipaza faolligining ortishi;
5. Fermentlarni ximus bilan aralashishini takomillashtiradigan ichak motorikasining yaxshilanishi;
6. Immun javobning normalizatsiyasi.

Gepatoprotektorlar

Sirrozda Sut tikanak (*Silybum marianum*) va boshqa safro haydovchi preparatlardan foydalanish taqiqlanadi.

Hujayraviy terapiya

An'anaviy davolash asosan jigar hujayralarini shikastlanishdan himoyalash, safro ajralishini rag'batlantirish, modda almashinuvi buzilishlarini tuzatish uchun farmatsevtik vositalarni qo'llashdan iborat. Shubhasiz, bu bemorning ahvolini yaxshilaydi, ammo kasallikning rivojlanishini to'xtata olmaydi. Agar yuqorida ko'rsatilgan muolajalar yordam qilmasa, jigar ko'chirib o'tkazish (transplantatsiya) amalga oshiriladi**.**

Jigar transplantatsiyasi

Jigar transplantatsiyasi jarrohlik muolaja bo'lib, unda to'g'ri ishlamaydigan jigar o'lgan donordan sog'lom jigar bilan almashtiriladi. Bundan tashqari, tirik donordan qisman sog'lom jigar bilan almashtirilishi mumkin.

Jigar tananing eng muhim organlaridan biri bo'lib, usiz odam yashay olmaydi. Jigar bir qator muhim funktsiyalarni bajaradi, jumladan:

- Oziq moddalar, gormonlar va dori-darmonlarni qayta ishlash,

- organizmga yog'lar, xolesterin va yog'da eriydigan vitaminlarniyordam beradigan safro ishlab chiqarish, tanadagi
- so'rishganormal metabolizmning buzilish mahsulotlarini
- olib tashlash, bakterial va toksinlarni olib tashlash. qondan
- Infektsiyalarning oldini olish, shuningdek, immunitet reaktsiyalarini tartibga solish

Jigar transplantatsiyasi surunkali jigar kasalligi tufayli turli xil og'ir asoratlardan aziyat chekadigan odamlar uchun variant hisoblanadi. Ba'zida jigar transplantatsiyasi, shuningdek, ilgari sog'lom jigar to'satdan faoliyatini to'xtatadigan kamdan-kam hollarda davolash usuli hisoblanadi.

Kimga jigar transplantatsiyasi kerak?

Jigar transplantatsiyasini talab qiladigan odamlarda odatda quyidagi holatlardan biri yoki bir nechtasi bo'ladi:

O'tkir jigar etishmovchiligi

O'tkir jigar etishmovchiligi, shuningdek, fulminant jigar etishmovchiligi deb ham ataladi, sog'lom jigar shikastlanganda sodir bo'ladi, buning natijasida jigar etishmovchiligining klinik belgilari va alomatlari sezilishi mumkin. Ko'p sabablar o'tkir jigar etishmovchiligiga olib kelishi mumkin, ammo eng ko'p uchraydigan sabablar asetaminofenning haddan tashqari dozasi, virusli infektsiyalar va zaharli qo'ziqorin kabi zaharli moddalarni iste'mol qilishdir. Surunkali jigar kasalligi bilan og'rigan bemorlardan farqli o'laroq, bir necha haftadan yillargacha hech qanday transplantatsiyasiz yashay oladilar, o'tkir jigar etishmovchiligi bo'lgan bemorlar transplantatsiya qilinmasa, bir necha kun ichida vafot etadilar.

Surunkali jigar etishmovchiligi Jigar

shikastlanishga javoban o'zini tiklash qobiliyatiga ega, ammo ko'p yillar davomida takroriy shikastlanish va tiklanish jigarda doimiy iz qoldirib ketishi mumkin. Ushbu chandiqning so'nggi bosqichi siroz deb ataladi. Bu jigar endi o'zini tiklay olmaydigan nuqtaga to'g'ri keladi. Agar odam sirroz bilan og'rigan bo'lsa, udeb nomlanuvchi jigar funktsiyasining etarli emasligi belgilarini ko'rsatishi mumkin *"dekompensatsiyalangan jigar kasalligi".* Dorilar simptomlarni kamaytirishga yordam beradi, ammo jigar transplantatsiyasi doimiy davolanish uchun yagona holatdir.

Jigar etishmovchiligiga olib keladigan sirozning asosiy sabablaridan ba'zilari quyidagilardir:

- Gepatit B va Gepatit C.
- Spirtli ichimliklarni haddan tashqari iste'mol qilish tufayli jigarga zarar etkazishi mumkin bo'lgan
- alkogolli jigar kasalligi. jigar va yallig'lanish yoki jigar hujayralarining shikastlanishiga olib keladi.
- Jigarga ta'sir qiluvchi irsiy kasalliklar, masalan, gemokromatoz, jigarda temirning haddan tashqari ko'payishi va Uilson kasalligi, jigarda misning haddan tashqari ko'payishiga olib keladi
- . O't yo'llariga ta'sir qiluvchi kasalliklar, jumladan birlamchi biliar siroz, birlamchi sklerozan xolangit va safro yo'llarining atreziyasi. Biliar atreziya bolalarda jigar transplantatsiyasining eng keng tarqalgan sababi sifatida ko'rish mumkin.

Jigar transplantatsiyasi jigarda paydo bo'ladigan ayrim saratonlarni davolash uchun ham ishlatilishi mumkin.

Jigar transplantatsiyasiga tayyorgarlik Transplantatsiya

markazini tanlash

Agar shifokoringiz jigar transplantatsiyasini tavsiya qilsa, siz ham transplantatsiya markaziga yuborilishi mumkin, lekin siz o'zingizdan birini yoki sug'urta kompaniyangizning afzal ko'rgan provayderlar ro'yxatidan birini tanlashingiz mumkin.

- Transplantatsiya haqida o'ylayotganda, ular amalga oshiradigan transplantatsiya turlari va har yili qancha amalga oshirilishi haqida bilishni unutmang.
- Shuningdek, markazning omon qolish darajasi haqida so'rov qiling. Shuningdek, ular ko'rsatadigan qo'shimcha xizmatlarni, masalan, qo'llab-quvvatlash guruhlarini muvofiqlashtirish, tiklanish

davrida mahalliy uy-joy bilan yordam berish va hokazolarni.

- tushunishga harakat qilingShuningdek, transplantatsiyadan oldin, davomida va keyin ko'tarilishi kerak bo'lgan umumiy xarajatlarni tushunib oling. .

Transplantatsiya markazini tanlaganingizdan so'ng, siz markazning muvofiqlik talablariga javob berishingizni aniqlash uchun baholashni talab qilasiz. Shuning uchun, siz boshqa markazda tekshiruvdan o'tishingiz kerak bo'lishi mumkin, bu jarayon sizning jarrohlik amaliyotini o'tkazish uchun etarlicha sog'lom ekanligingizni, transplantatsiyaga xalaqit beradigan biron bir tibbiy holatingiz bor-yo'qligini va kerakli dori-darmonlarni qabul qilishga tayyormisizligini aniqlaydi. .
Keyinchalik siz maxsus testlar va protseduralardan o'tasiz, ular quyidagilarni o'z ichiga oladi:

- a'zolaringizning umumiy sog'lig'iga kirish uchun qon yoki siydik sinovlarini o'z ichiga olishi mumkin bo'lgan laboratoriya testlari
- Yurak-qon tomir tizimingiz qanchalik kuchli va sog'lom ekanligini aniqlash uchun yurak
- testlari. Jigar ultratovush tekshiruvi
- sifatida Umumiy sog'lig'ingizni tekshirish, shuningdek, transplantatsiya muvaffaqiyatiga ta'sir qilishi mumkin bo'lgan boshqa kasalliklarni tekshirish uchun muntazam saraton skrining tekshiruvlarini o'z ichiga oladi.

Bunga qo'shimcha ravishda, transplantatsiyadan oldin sizga ovqatlanish bo'yicha maslahat, moliyaviy maslahat va psixologik baholash kerak bo'lishi mumkin.

Jarayon oldidan

Sizning tekshiruvlaringiz o'tkazilgandan so'ng, shifokorlar kasallikning og'irligini va qanchalik tez transplantatsiya qilishingiz kerakligini bilish uchun ularni baholaydilar. Sizning kutish ro'yxatidagi joyingiz shu bilan aniqlanishi kerak. Ba'zi odamlar bir necha kun yoki haftadan so'ng yangi jigarni olishlari mumkin, ba'zilari esa yillar kutishlari yoki hatto transplantatsiya ololmaydilar.

Sog'lom bo'ling

Sog'lom va faol bo'lish, siz donor qilingan jigarni kutyapsizmi yoki operatsiyangiz allaqachon rejalashtirilgan bo'lishidan qat'i nazar, juda muhimdir. Bu ham tez tiklanishiga olib keladi. Sog'liqni saqlash guruhi bilan barcha uchrashuvlarni saqlang, shuningdek, tibbiy mutaxassislar tomonidan belgilangan dori-darmonlarni qabul qiling.
Organ donorlarining turlari

Miya o'lik organ donorlari

Biz transplantatsiya qilish uchun foydalanadigan jigarlarning aksariyati miyasi o'lgan bemorlardan olinadi. Miya o'limi to'mtoq shikastlanish yoki penetratsion shikastlanish tufayli boshning katta insult yoki katta shikastlanishi natijasida yuzaga keladi. Bunday travma miyaning barcha funktsiyalarini to'xtatishi mumkin, ammo jigar kabi boshqa organlar to'g'ri ishlashda davom etishi mumkin.

Kardiyak o'lim a'zolari donorlari

Ba'zida bemor halokatli miya shikastlanishiga uchrasa, shuningdek, ayanchli nevrologik prognozga ega bo'lsa, lekin miya o'limining qat'iy mezonlariga javob bermasa, chunki miya funktsiyasi hali ham mavjud bo'lsa, bemorning oilasi hayotni saqlab qolish uchun tibbiy yordamni bekor qilishni tanlashi mumkin. bemorning o'limiga imkon berish uchun bunday vaziyatda qo'llab-quvvatlash. Bunday stsenariyda u miya o'limi emas, balki yurak o'limi sifatida aniqlanadi. Shundan so'ng, agar oila rozi bo'lsa, organ donorligi amalga oshirilishi mumkin.

Tirik donorlar

Garchi barcha odamlarda faqat bitta jigar bo'lsa-da, aslida jigarning bir qismini boshqa shaxsga transplantatsiya qilish uchun berish mumkin. Segmental anatomiya jarrohlarga qabul qiluvchining jigar to'qimalariga bo'lgan talabiga bog'liq bo'lgan turli o'lchamdagi greftlarni yaratishga imkon beradi. Donor va shuningdek, qabul qiluvchining qisman jigarlari oxir-oqibat o'sishi va ularning

ikkalasi uchun normal jigar funktsiyasini ta’minlashi mumkin.
tartibichog'ida
marhum Donor quyish
Agar marhum donor bir jigar mavjud ekanligini ogohlantirilganidan keyin darhol sizning kasalxonaga borish kerak va tez orada siz operatsiya sog’lom etarli ishonch yo’qligini qilish uchun bir imtihon duchor bo’ladi.
Jigar transplantatsiyasi operatsiyasi paytida umumiy behushlik qo’llaniladi, shuning uchun siz butun jarayon davomida tinchlanasiz.
Transplantatsiya bo’yicha jarroh jigaringizga kirish uchun qorin bo’shlig’ida uzun kesma qilishdan boshlaydi. Jarrohingizning yondashuvi va sizning anatomiyangizga ko’ra, kesmaning joylashishi va hajmi farq qilishi mumkin. Keyinchalik, jarroh kasal jigarni olib tashlaydi va donor jigarini tanangizga joylashtiradi.
Bu amalga oshirilgandan so’ng, jarrohingiz qon tomirlari va o’t yo’llarini donorning jigariga bog’laydi. Vaziyatingizning og’irligiga qarab, operatsiya hatto 12 soatgacha davom etishi mumkin.
Yangi jigar o’rnatilgandan so’ng, jarroh kesmani yopish uchun choklar bilan bir qatorda shtapellardan foydalanadi. Buni amalga oshirgandan so’ng, tiklanishni boshlashingiz uchun siz reanimatsiya bo’limiga o’tasiz.
Tirik donor jigar transplantatsiyasi
Agar siz yangi jigaringizni tirik donordan olayotgan bo’lsangiz, operatsiyani oldindan rejalashtirish kerak bo’ladi.
Dastlab, donor operatsiya qilinadi va transplantatsiya uchun jigar qismi chiqariladi. Shundan so’ng jarrohlar kasal jigarni olib tashlashadi, shundan so’ng yangi donor qilingan jigar qismi tanangizga joylashtiriladi. Shundan so’ng, ular qon tomir va o’t yo’llarini yangi jigar bilan bog’laydilar.
Tananing ko’chirilgan qismi, shuningdek, donorning tanasida qolgan qismi tez hosil bo’ladi va bir necha hafta ichida u normal hajmga erisha oladi.

JarayondanJarayoningiz

so’ngtugagach, siz bir necha kun intensiv terapiya bo’limida qolishingiz kerak bo’lishi mumkin. Tibbiyot mutaxassislari sizning ahvolingizni kuzatishi, shuningdek, asoratlar belgilarini kuzatishi kerak. Shuningdek, ular yangi jigar ishlayotganini ko’rsatish uchun tez-tez jigar faoliyatini tekshiradilar. Reanimatsiya bo’limidan chiqqaningizdan so’ng, transplantatsiyani tiklash zonasida bir necha kun qolishingiz kerak bo’ladi.
Sizning transplantatsiya guruhingiz siz uchun tekshiruv jadvalini ishlab chiqishi mumkin va siz haftada bir necha marta qon tekshiruvidan o’tishingiz kerak bo’lishi mumkin. Transplantatsiyadan so’ng siz butun umringiz davomida immunosupressantlar kabi dori-darmonlarni qabul qilishingiz kerak bo’ladi. Ushbu dori sizning immunitet tizimingizni yangi jigaringizga hujum qilishdan saqlaydi, boshqa dorilar esa asoratlar xavfini kamaytirishga yordam beradi.
To’liq davolanish uchun olti oygacha vaqt kerak bo’lishi mumkin. Qancha vaqt ketishi ham transplantatsiyadan oldin ahvolingiz qanchalik og’ir bo’lganiga bog’liq.
Transplantatsiyadan so’ng siz transplantatsiya qiluvchilarni qo’llab-quvvatlash guruhiga qo’shilishni tanlashingiz mumkin. Jigarni tiklash va sog’lom saqlashga yordam berish uchun muvozanatli ovqatlanish ham juda muhimdir.
Xavflar va asoratlar
Ko’pgina transplantatsiyalar singari, jigar jarrohligi ham muhim asoratlar xavfini o’z ichiga oladi, bu jarayonning o’zi, shuningdek, transplantatsiya tugagandan so’ng donorning jigarini rad etishning oldini olish uchun zarur bo’lgan dorilar bilan bog’liq. Jarayon bilan yuzaga kelishi mumkin bo’lgan xavflardan ba’zilari quyidagilardan iborat:
- o’t yo’llarining qisqarishi yoki o’t yo’llarining oqishini o’z ichiga olishi mumkin bo’lgan o’t yo’llarining asoratlari
- Qon ketishi

- Qon ivishi
- Donor jigar etishmovchiligi
- Infektsiya
- Donor qilingan jigarni rad etish
- Ruhiy chalkashlik yoki tutilish

Agar yuzaga keladigan asoratlar uzoq muddatli bo'lsa, bu transplantatsiya qilingan jigarda jigar kasalligining qaytalanishiga ham olib kelishi mumkin.

Dori vositalarining nojo'ya ta'siri

Jigar transplantatsiyasidan keyin tanangiz yangi jigarni rad etishiga yo'l qo'ymaslik uchun butun umringiz davomida dori-darmonlarni qabul qilishingiz kerak bo'ladi. Biroq, bu rad etishga qarshi dorilar ko'plab nojo'ya ta'sirlarni keltirib chiqarishi mumkin, masalan:

- Suyaklarning ingichkalashi
- Qandli diabet
- diareya,
- yuqori xolesterin,
- yuqori qon bosimi,
- bosh og'rig'i

Jigar sirrozi jiddiy, ko'p sabablarga ega kasallik bo'lib, asoratlarining erta aniqlanishi va zamonaviy davolash yondashuvlari bemor hayot sifatini yaxshilaydi. Portal gipertenziya, askit, qon ketish va ensefalopatiya – asosiy xavfli holatlar hisoblanadi. Jigar transplantatsiyasi esa ko'plab bemorlar uchun yagona umid hisoblanadi. Shu bois, har tomonlama baholash va transplantatsiyaga puxta tayyorgarlik zarur.

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Methodology For Developing Motivation And Volitional Qualities In Kurash Sport

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Abstract
This article explores the development of motivation and volitional qualities in athletes practicing Kurash. Kurash is a sport that requires not only physical strength but also strong psychological preparation. An athlete’s internal motivation and volitional traits-such as determination, patience, and resilience-are key factors for success in competition. The study employs an experimental method using psychological training, motivational discussions, autogenic training, and visualization exercises. The effectiveness of these methods is assessed by comparing results between experimental and control groups. The article also provides methodological recommendations for coaches, highlights key considerations when selecting athletes, and suggests ways to improve the mental and emotional readiness of Kurash practitioners. Findings indicate that targeted development of motivation and volitional traits significantly enhances overall athlete preparedness.
Keywords: wrestling, motivation, volitional quality, age characteristics, strength, speed, endurance, coordination, sports training, young athletes, methodology.

Annotatsiya. Mazkur maqolada kurash sporti bilan shug‘ullanuvchi sportchilarda motivatsiya va irodaviy sifatlarni rivojlantirish masalasi yoritilgan. Kurash nafaqat jismoniy, balki ruhiy va psixologik tayyorgarlikni ham talab qiladigan sport turi hisoblanadi. Sportchining ichki motivatsiyasi va irodaviy xususiyatlari-qat’iyatlilik, sabr-toqat, bardoshlilik musobaqalardagi muvaffaqiyatning muhim omillaridan sanaladi. Tadqiqotda eksperimental metoddan foydalanilib, psixologik treninglar, motivatsion suhbatlar, avto-trening va vizualizatsiya mashqlari qo‘llanilgan. Ularning samaradorligi eksperimental va nazorat guruhlarining natijalari orqali taqqoslab tahlil qilinadi. Maqolada shuningdek, trenerlar uchun metodik tavsiyalar, sportchilarni tanlashda e’tibor qaratilishi lozim bo‘lgan jihatlar va kurashchilarning ruhiy-psixologik holatini yaxshilash yo‘llari taklif etilgan. Tadqiqot natijalari shuni ko‘rsatadiki, motivatsiya va iroda ustida maqsadli ish olib borish sportchilarning umumiy tayyorgarligini sezilarli darajada oshiradi.
Kalit so’zlar: kurash, motivatsiya, iroda sifati, kuch, tezlik, chidamlilik, koordinatsiya, sport mashg‘ulotlari, yosh sportchilar, metodika.

KIRISH. Kurash - o‘zbek xalqining milliy sport turi bo‘lib, nafaqat jismoniy, balki ruhiy sifatlarni ham tarbiyalashda muhim vositadir. Kurashchilar uchun kuch, chaqqonlik, muvozanat bilan bir qatorda motivatsiya va irodaviy sifatlar ham yuqori darajada bo‘lishi zarur. Bu maqolada kurashchilarni musobaqalarga tayyorlash jarayonida motivatsiya va irodaning ahamiyati, ularni rivojlantirish metodikalari, shuningdek, eksperimental tarzda o‘tkazilgan tadqiqot natijalari ko‘rib chiqiladi.

Zamonaviy sport psixologiyasi shuni ko‘rsatadiki, motivatsiyasi kuchli sportchilar o‘z oldiga aniq maqsadlar qo‘yib, ularga erishishda qat’iy harakat qiladilar. Kurash sporti esa bu xususiyatlarni rivojlantirish uchun qulay maydon bo‘lib xizmat qiladi. Ushbu maqolada kurashchilarda motivatsiya va irodaviy sifatlarni rivojlantirishga qaratilgan zamonaviy metodikalar, ularning amaliy qo‘llanilishi, tajriba asosida tahlil qilingan natijalar yoritiladi.

TADQIQOTNING DOLZARBLIGI. Bugungi sportchilar faqat kuchli jismoniy tayyorgarlik

bilan emas, balki kuchli ruhiy-psixologik tayyorgarlik bilan ham ajralib turadi. Kurash sporti o‘ziga xos jihatlari bilan sportchilardan yuqori darajadagi motivatsiya va iroda talab qiladi. Musobaqa davomida raqibga qarshi chiqish, bosim ostida sovuqqonlikni saqlab qolish, oxirgi daqiqalarda g‘alabani qo‘lga kiritish faqat jismoniy kuch bilan emas, balki kuchli iroda bilan bog‘liqdir.

Kurash sportida bugungi global raqobat sharoitida sportchilarning ruhiy holatini mustahkamlash va motivatsiyasini doimiy yuqori darajada saqlab qolish ustuvor vazifalardan biri hisoblanadi. Shu bois, trenerlar, sport psixologlari va metodistlar tomonidan kurashchilarning psixologik tayyorgarligiga oid maxsus treninglar, mashg‘ulotlar, ruhiy barqarorlikni shakllantiruvchi uslublarni amaliyotga joriy etish zarurati tug‘ilmoqda.

Hozirgi kunda kurash bo‘yicha O‘zbekiston sportchilari xalqaro maydonlarda muvaffaqiyatli ishtirok etib kelmoqda. Ularning muvaffaqiyati faqatgina kuch va texnikaga emas, balki ichki motivatsiya va qat’iyatga ham bevosita bog‘liq. Shu sababli, sportchilarni har tomonlama tayyorlashda psixologik tayyorgarlikka alohida e’tibor qaratilishi lozim.

Yana bir dolzarb masala - yosh sportchilar orasida motivatsiya pasayishining oldini olish. Uzoq muddatli sport faoliyatini davom ettirishda motivatsiyaning pasayishi, psixologik charchoq, ruhan tushkunlik holatlari sportchilarni sportdan voz kechish darajasiga olib kelmoqda. Shunday holatlarning oldini olishda ijobiy motivatsion muhit yaratish, irodaviy sifatlarga ega bo‘lgan sportchilarni tarbiyalash asosiy vazifa hisoblanadi.

Motivatsiya va iroda - sportdagi yutuqlarning muhim tarkibiy qismlaridan biri hisoblanadi. Ayniqsa, kurash sportida bu sifatlarning kuchli bo‘lishi sportchining muvaffaqiyatli faoliyat yuritishida muhim rol o‘ynaydi. Har bir sportchi mashg‘ulotlarda, musobaqalarda duch keladigan og‘irliklar, psixologik bosim, charchoq, raqobat muhitiga bardosh bera olishi uchun irodaviy sifatlarga ega bo‘lishi kerak. Bu esa, maxsus metodik yondashuvlar orqali rivojlantiriladi.

Tadqiqotning maqsadi: Kurash sporti bilan shug‘ullanuvchi sportchilarning motivatsiyasi va irodaviy sifatlarini oshirishga qaratilgan samarali metodikalarni ishlab chiqish va amaliyotga tatbiq etish.

Vazifalar:

1. Motivatsiyaning psixologik asoslarini o‘rganish.
2. Sportchilarda iroda sifatlarining shakllanishini tahlil qilish.
3. Trening asosida motivatsiyani oshirish va iroda sifatlarini rivojlantirish samaradorligini baholash.

ADABIYOTLAR TAHLILI VA METODOLOGIYASI

Kurash sportida metodik tajribalar. Motivatsiya nazariyalari. Motivatsiyaning psixologik nazariyalaridan biri A. Maslou tomonidan ishlab chiqilgan ehtiyojlar ierarxiyasi nazariyasidir. Shuningdek, Detsiy va Rayan tomonidan ishlab chiqilgan o‘z-o‘zini belgilash nazariyasiga ko‘ra, sportchi mustaqillik, kompetensiya va ijtimoiy aloqalar orqali motivatsiyalanadi. Ushbu nazariyalar sportchilarning ichki va tashqi motivatsiya manbalarini tahlil qilishda asos bo‘lib xizmat qiladi.

Irodaviy sifatlar haqida qarashlar. Iroda bu – shaxsning ongli faoliyatini amalga oshirishda bardoshlik, qat’iyatlilik, sabr-toqat, o‘zini nazorat qilish qobiliyatidir. Sport faoliyatida bu jihatlar, ayniqsa musobaqa sharoitida sportchining o‘zini tutishi, vaziyatga mos qaror qabul qilishi, kuchli raqib qarshisida ruhiy barqarorlikni saqlab qolishida namoyon bo‘ladi. Sportchilarda iroda sifatlari, jumladan qat’iyatlilik, bardoshlilik, mas’uliyat, o‘zini boshqara olish qobiliyati muhim rol o‘ynaydi. Psixolog V.K. Belyayev irodani ongli faoliyatni amalga oshirishdagi markaziy kuch deb ataydi.

Mahalliy va xorijiy olimlar. Mahalliy olimlardan A. Jo‘rayev, B. Ro‘zmetov, xorijiy tadqiqotchilardan R. Vaynberg, D. Gud va

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boshqalar sport motivatsiyasi va iroda sifati haqida asosli tadqiqotlar olib borgan.

Kurashchilarni ruhiy tayyorlash bo‘yicha ko‘plab metodik yondashuvlar mavjud. Xususan, O‘zbekiston sportchilarining xalqaro musobaqalardagi muvaffaqiyatli chiqishlari psixologik tayyorgarlik bilan bog‘liqdir. Tajribali murabbiylar tomonidan tavsiya etilgan psixologik mashg‘ulotlar motivatsiyani oshirishda ijobiy natijalar bergan.

Kurash sportida metodik tajribalar. Kurash sportida psixologik tayyorgarlikka oid bir qator tadqiqotlar mavjud. Jumladan, musobaqa oldidan ruhiy tetiklikni saqlash, stressga bardosh berish, vizualizatsiya va meditatsiya orqali ishonch uyg‘otish metodlari yaxshi samara bermoqda. Bu metodlar amalda samaradorligi bilan ajralib turadi.

Psixologik treninglar va mashg‘ulotlar.

Eksperiment jarayonida quyidagi metodikalar amalda sinovdan o‘tkazildi:

- **Avto-trening** – sportchilar o‘z fikrlarini ijobiy yo‘nalishda shakllantirish orqali o‘ziga bo‘lgan ishonchni kuchaytirdi.
- **Motivatsion suhbatlar** – murabbiylar bilan o‘tkazilgan interaktiv muloqotlar orqali sportchilarning ichki motivatsiyasi mustahkamlandi.
- **Vizualizatsiya** - sportchilar g‘alabani tasavvur qilish orqali psixologik tayyorgarlikni oshirdi.
- **Jurnal yuritish** - sportchilar kunlik maqsadlar va ularga erishish yo‘llarini qayd etib bordilar.

Trening davomiyligi va shiddati.

- Treninglar 6 hafta davomida, haftasiga 3 marotaba, har biri 60 daqiqalik mashg‘ulot sifatida tashkil etildi.
- Har bir mashg‘ulot 3 bosqichdan iborat: (1) motivatsion kirish so‘zi; (2) asosiy psixologik mashqlar; (3) yakuniy tahlil va fikr almashinuvi.
- Mashg‘ulotlar shiddati haftadan haftaga bosqichma-bosqich oshirildi. Dastlab yengil va umumiy mashg‘ulotlar, keyinchalik murakkabroq irodaviy testlar bilan boyitildi. Mashg’ulotlar oddiydan-murakkabga, osondan-qiyinga tamoyili asosida olib borildi.

Eksperimental metodika.

Tadqiqotda 2 ta guruh ishtirok etdi:

- Eksperimental guruh (psixologik treninglar va amaliy mashg‘ulotlar asosida)
- Nazorat guruhi (oddiy mashg‘ulotlar asosida)

TADQIQOT NATIJALARI

1-jadval.

Treningdan oldingi va keyingi natijalar (motivatsiya darajasi, iroda ko‘rsatkichlari %)

Guruh	Motivatsiya (avval)	Motivatsiya (keyin)	Iroda (avval)	Iroda (keyin)
Eksperimental	62%	87%	65 %	90 %
Nazorat	60%	66%	63 %	68 %

XULOSA. Kurash sportida faqat jismoniy emas, balki psixologik tayyorgarlik ham muhim hisoblanadi.

- Motivatsion treninglar va iroda ustida ishlash sportchilarning musobaqaga tayyorlanish jarayonida katta rol o‘ynaydi.
- Trenerlar har bir sportchining ruhiy holatini hisobga olgan holda individual yondashuvni tanlashi kerak.

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The Legal Basis for Offsetting Negative Differences Arising from Value-Added Tax in Enterprises

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Abstract
This article explores the negative VAT difference and excess tax payment concepts within the framework of the value-added tax (VAT) system from an economic and legal perspective. A negative VAT difference occurs when the amount of input VAT exceeds the output VAT from sales. In contrast, an excess tax payment refers to a situation where a taxpayer pays more VAT to the state budget than required, often due to errors or miscalculations. The article provides a comparative analysis of these concepts, explains their implications for tax accounting, and offers recommendations for improving VAT reporting practices. Legal interpretation, empirical examples, and graphical tools are used to illustrate their economic significance.
Keywords: Value-added tax, negative difference, excess tax payment, VAT accounting, tax policy, economic analysis

Introduction.
Value-Added Tax (VAT) plays a vital role in the fiscal policy of many countries, including Uzbekistan, serving as a major source of government revenue while ensuring tax neutrality in the supply chain. In practice, enterprises often face situations where the amount of input VAT (paid on purchases) exceeds the output VAT (charged on sales), resulting in a negative VAT balance. This negative difference, also known as excess input VAT, can significantly affect the cash flow and financial stability of businesses, particularly in sectors with high capital investments or delayed revenue cycles.
Recognizing the economic implications of such imbalances, many tax systems provide mechanisms for offsetting or refunding the negative VAT difference. However, the effectiveness and fairness of these mechanisms largely depend on the clarity, consistency, and enforceability of the legal framework governing VAT administration. In Uzbekistan, several legislative and regulatory acts outline the conditions and procedures for refunding or carrying forward the negative VAT balance. Nevertheless, challenges remain in their practical application, such as bureaucratic delays, legal uncertainties, and administrative discretion.
This article aims to analyze the legal foundations for offsetting negative VAT differences in enterprises, explore existing gaps and ambiguities in current legislation, and propose practical recommendations based on international best practices to enhance transparency and efficiency in VAT administration.

Literature Review.
The issue of value-added tax (VAT) administration, particularly the treatment of negative VAT balances, has been widely discussed in the global academic and professional literature. Scholars and policymakers have examined the economic, legal, and administrative dimensions of VAT refund mechanisms, emphasizing their impact on business liquidity, investment climate, and tax compliance.According to Ebrill et al. (2001), in their seminal work *The Modern VAT*, one of the core features of an efficient VAT system is its neutrality, which is only achieved when input taxes are effectively credited or refunded. Failure to refund excess input VAT in a timely manner, they argue, transforms VAT into a cumulative tax, distorting business decisions and undermining economic

efficiency.Bird and Gendron (2007) highlight that while VAT systems are designed to be neutral and self-enforcing, the refund mechanism is often the "Achilles' heel" of the system, especially in developing and transition economies. Their research identifies delays, corruption risks, and excessive administrative discretion as common problems affecting VAT refunds in such contexts.In the context of post-Soviet countries, including Uzbekistan, researchers such as Gorodnichenko, Martinez-Vazquez, and Sabirianova (2009) have analyzed VAT refund systems and noted that strict refund controls and bureaucratic procedures are often justified by governments as anti-fraud measures. However, these controls frequently lead to liquidity shortages for compliant businesses, particularly exporters and capital-intensive enterprises.From a legal standpoint, OECD (2016) guidelines stress the importance of a predictable and transparent legal framework for VAT refunds. They recommend that tax administrations establish clearly defined timelines, objective criteria, and efficient dispute resolution procedures to minimize the legal uncertainty surrounding VAT refunds.In Uzbekistan, a limited but growing body of literature has emerged around the implementation of VAT and its legal structure. National scholars, such as Islomov (2020) and Tursunova (2022), have discussed the evolving nature of the VAT refund process in Uzbekistan following tax reforms. They argue that while the legal foundations have improved with the adoption of the Tax Code (2020), challenges remain in aligning practice with policy, particularly in relation to administrative transparency and taxpayer rights.Moreover, comparative studies have shown that countries such as Estonia, Georgia, and Lithuania have made significant strides in developing fast and automated VAT refund systems by leveraging e-invoicing and risk-based auditing. These systems have not only reduced refund processing times but also minimized opportunities for fraud, offering valuable lessons for countries like Uzbekistan.Overall, the literature indicates a consensus that a well-functioning VAT refund system is critical to maintaining VAT neutrality and ensuring fairness in the tax system. However, achieving this requires not only robust legal provisions but also institutional capacity, digital infrastructure, and a taxpayer-centered administrative culture.

Methodology.

This study adopts a qualitative research approach to examine the legal foundations and practical mechanisms for offsetting negative value-added tax (VAT) differences in enterprises, with a particular focus on the Republic of Uzbekistan. The research methodology is based on a combination of legal analysis, comparative review, and policy evaluation.Legal and Normative Document Analysis Primary data for the study were collected through an in-depth review of national legislation, including the Tax Code of the Republic of Uzbekistan (2020), presidential decrees, Cabinet of Ministers' resolutions, and guidelines issued by the State Tax Committee. These documents were analyzed to understand the legal procedures, rights, and limitations concerning the refund or offsetting of excess input VAT.Comparative Analysis to provide broader context and highlight potential areas for reform, a comparative analysis was conducted by examining the VAT refund systems of selected countries with similar economic structures, such as Georgia, Kazakhstan, and Lithuania. This involved analyzing publicly available tax laws, OECD and IMF reports, and World Bank policy papers related to VAT administration and refund procedures.Case Study and Practice-Based Review the research includes an examination of recent cases and reports involving VAT refund claims in Uzbekistan. Data were gathered from tax dispute summaries, business surveys (where available), and expert commentary. These practical insights help assess how well the legal norms are

implemented in real-world scenarios and what challenges enterprises face during the refund process.Expert Opinion and Academic Sources secondary data were drawn from academic articles, policy research papers, and reports by international organizations such as the OECD, IMF, and UNCTAD. In addition, opinions from legal scholars and tax consultants in Uzbekistan were considered to evaluate the interpretation and application of VAT refund regulations. Synthesis and Recommendations findings from all sources were synthesized to identify existing gaps in legislation, inconsistencies in implementation, and opportunities for reform. The study concludes with a set of legal and administrative recommendations aimed at improving the VAT refund system's efficiency, fairness, and transparency.

Results and Discussion.

The analysis of Uzbekistan's VAT system reveals a number of critical insights regarding the legal and practical aspects of offsetting negative differences (i.e., excess input VAT). While there have been notable improvements in the legislative framework since the adoption of the new Tax Code in 2020, several issues persist in the actual implementation of VAT refunds and offsets, which impact businesses' liquidity and tax compliance behavior. Legislative Improvements and Current Provisions, the 2020 Tax Code of the Republic of Uzbekistan introduced clearer procedures for VAT refund claims. Article 263 of the Code outlines the right of taxpayers to receive a refund of excess input VAT under specific conditions, such as when input VAT exceeds output VAT for more than three consecutive months or when the taxpayer is an exporter of goods or services.Additionally, Presidential Decree No. PF-6011 (2019) and related Cabinet of Ministers' Resolutions reinforced the need to digitize VAT accounting and refund processes through the implementation of the E-Soliq platform. The introduction of electronic invoicing (E-NDS) and digital VAT reporting has helped improve transparency and reduce manual errors in VAT calculations.Practical Challenges and Delays,despite legal provisions, many enterprises report delays and procedural complexity in obtaining VAT refunds. For example, a 2022 survey conducted by the Chamber of Commerce and Industry of Uzbekistan found that over 45% of businesses faced delays exceeding three months when applying for VAT refunds, even when they fulfilled all legal requirements. One common issue is the lengthy verification process by the tax authorities, who often require extensive documentation and perform additional audits before approving refunds. In some cases, businesses are requested to provide supplier-level documentation, which can be difficult to obtain, especially for SMEs. This creates a cash flow bottleneck, particularly for exporters and construction firms with high input VAT levels.

Case Example, textile Exporter in Tashkent Region,a notable example is a textile company in the Tashkent region, which exports over 80% of its products. The company reported accumulating more than 1.5 billion UZS in refundable input VAT in 2023. Although it submitted the refund request through the E-Soliq system, the process took over four months due to repeated documentation requests and an unannounced field audit. As a result, the company experienced a working capital shortage that delayed salary payments and raw material purchases.

Institutional Constraints,institutional factors also contribute to inefficiencies in the refund process. There is no fixed legal deadline for the tax authority to process and approve VAT refunds, creating legal uncertainty for taxpayers. Additionally, lack of risk-based auditing systems means that even low-risk, compliant taxpayers are subjected to the same scrutiny as high-risk entities, leading to inefficiencies.Positive Developments and Pilot Projects,on a more positive note, the State Tax Committee launched a pilot fast-track refund system for certified exporters in

2023. Under this initiative, low-risk exporters receive VAT refunds within 15 working days if they meet specific criteria, such as a clean tax compliance record and electronic invoice matching. Early results suggest that this pilot has reduced refund times by 40% for participating companies.

Comparison with International Practice,compared to countries like Georgia and Lithuania, where automated VAT refund systems are supported by integrated digital tax platforms and strict statutory deadlines (usually 30 days), Uzbekistan's system still lags in terms of speed and predictability. These countries use risk scoring algorithms to prioritize refund claims, reducing unnecessary delays for law-abiding taxpayers.Legal Gaps and Recommendations,the absence of a guaranteed refund timeline, ambiguity in audit triggers, and limited taxpayer appeal mechanisms are key legal gaps that need to be addressed. The legal framework should be amended to include:

-A maximum processing time (e.g., 30 calendar days) for standard refund claims.

-Risk-based audit criteria to streamline verification.

-A digital tracking system where businesses can monitor refund status in real time.

Conclusion.

The study highlights that while Uzbekistan has made significant strides in reforming its VAT system, particularly with the adoption of the 2020 Tax Code and the digitalization of tax reporting, substantial challenges remain in the practical implementation of offsetting or refunding negative VAT balances. Excess input VAT, if not refunded in a timely and transparent manner, can create serious cash flow issues for businesses, especially exporters and capital-intensive enterprises.The absence of clearly defined statutory timelines for VAT refunds, burdensome documentation requirements, and excessive administrative discretion continue to undermine the effectiveness of the current system. These issues contribute to legal uncertainty, reduce taxpayer trust, and may even discourage formal economic activity.However, recent pilot initiatives such as the fast-track VAT refund mechanism for exporters and the use of electronic invoicing systems demonstrate the potential for modernization and improved efficiency. Drawing on successful international models, such as those of Georgia and Lithuania, Uzbekistan can benefit greatly from further aligning its legal and institutional framework with global best practices.To ensure the VAT system remains neutral, fair, and business-friendly, it is essential to introduce time-bound procedures, risk-based audits, and real-time digital monitoring tools. Strengthening legal guarantees for taxpayers and enhancing institutional capacity will not only reduce administrative delays but also promote economic growth through improved tax compliance and a more favorable investment environment.In conclusion, closing the gap between legal norms and administrative practice is key to creating a VAT system that supports enterprise development while safeguarding public revenues.

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Optimization Of Digital Monitoring And Automation Technologies For Railway Automation And Telemechanics Devices

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Abstract
The article outlines the process for developing an electronic document management system for technical documentation (EDTD), explains its generalized formalized scheme, introduces a formal model of EDTD, automates the organization's document passing process, and offers the following features: These fundamental ideas form the foundation of the organization. The system improves transparency and accountability in managing railway automation and telemechanics documentation. It also enables real-time monitoring and secure data storage through a centralized server platform.
Keywords: electronic document management, railway automation and telemechanics, server program, database table, automated system,

Introduction.
The following features are offered by the automated accounting and signaling device control system, which is intended to automate document passing procedures inside an organization:
- registering documents;
- distribution of electronic documents among staff members;
- authority over document transmission and accompanying order execution;
- generating logs and reports;
- electronic message transmission amongst staff members.

The system is multi-user and allows a team of employees to work together in a coordinated manner. Both the system's structure and the requirements for its configuration — such as identifying system users, controlling access rights to processed data, and guaranteeing the security and integrity of data—are to blame for this.

The system must be used within the organization's local network and features a client-server architecture. With this kind of system architecture, you can offer the following essential features:
- the arrangement of an arbitrary, readily adjustable number of occupations, as dictated by the amount of labor, the type of tasks completed inside the business, and the number of employees needed for this;
- efficient safeguarding of data integrity when using the multi-user access method;
- guaranteeing information security because of its centralized recovery and archiving;
- maintaining information confidentiality through the control of access permissions.

The following fundamental ideas serve as the foundation for document accounting and tracking of their movement within the company:
- the process by which a person with the authority to modify documents — a registrar — creates a new document in the system is known as document registration;
- registration form of a document: a collection of characteristics that identify important details about the document so that you can locate it in the database and follow its progress;
- task associated with carrying out a document that the organization's management has given to an employee;

- execution of a document — a series of steps taken by a professional (the responsible executor) or a team of professionals (co-executors) carrying out directives for processing a document and then passing it on to other executors afterwards;
- document execution control, which is carried out by a user who has been specifically designated as the controller, tracks the document's actual passage and the time at which it is executed inside the company [1-3].

The electronic executive system's constituent parts

Software for servers. The employment of a unique program called the document management server is essential to the operation of the document management system. The primary tasks that guarantee users' work are performed by the document management server: receiving requests, accessing the database, processing data, and providing results. Users cannot work with papers or communicate with the document management system until the main software is activated.

The workflow server software itself operates on a server, which is a computer that is part of the organization's network. Depending on the volume of document work, either a network workstation or a separate computer might be chosen for the workflow server. We can predict that a document flow server running on a middle-class workstation is perfectly fine for minor document flows (up to 100 per day), and that it can be used concurrently for regular office tasks without experiencing a significant slowdown. However, it should be noted that the creation of document-related jobs and messages, as well as the registration of new documents, result in an increase in the size of the database and the amount of disk space it takes up. For this reason, one must make sure that there is enough hard disk capacity to accommodate the possibility of an increase in the flow of documents [5].

Program's administrative component. It makes sense to centrally manage a system that is used by numerous people. System administrators are a specially appointed individual or employees who carry out this role by implementing a single consistent policy for setting up and maintaining the system.

Specifically, the following are among the responsibilities of the system administrator:
- consideration of the organization's current structure in its system;
- enrollment of users;
- going through error and system notifications;
- making changes to the database tables.

Along with these duties, the system administrator also handles workflow server startup and shutdown, system configuration and maintenance, database backup creation, and system restoration in the event of an outage [6-9].

Client-side. A system user is an employee of an organization who has registered and is using the system to process documents based on their work duties. According to the nature of the activity, the administrator grants the system user the authority to carry out specific tasks and view specific documents. System users may have different access levels depending on their roles, such as read-only, editing, or administrative rights. The system logs all user actions to ensure traceability and accountability. User authentication is performed through a secure login process, ensuring that only authorized personnel can access sensitive data. Users can also receive automated notifications about task deadlines, document updates, or approval statuses.

Users of the system may be granted the following privileges:
- authority to carry out directives and responsibilities. A user with these rights can act as a controller and keep an eye on how papers and employee directions are being carried out;
- management of the system. Such rights allow a user to carry out the duties of a

system administrator, including creating user accounts, granting users rights, and altering system configurations;
- the level of access to each of the available document streams can also be granted to the user by adding the following to the relevant list:
- a list of people who have the ability to register new documents in this stream is known as document editing.
Figures 1 and 2 illustrate the automated system model for enrolling and controlling signaling devices as well as the data processing structure.

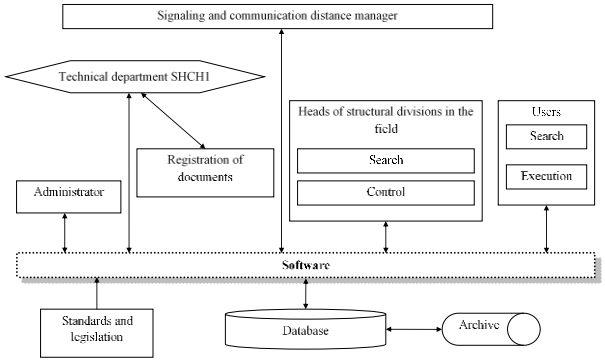

Figure 1. Conceptual model of the automated accounting and signaling device control system.

Creating a Server Program

A number of tasks are carried out by the workflow server program:
- handling client demands;
- production of logs including service information;
- acts as a go-between for the client and the database;
- completes the process of registering a user.
The automated accounting and control system of signaling devices' structure diagram is displayed in figure 3.

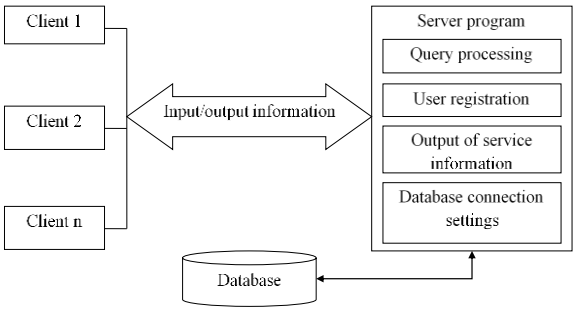

Figure 2. The automated accounting and signaling device control system's operational scheme

Since data should not be lost in transit, requests to the server software should be sent using the TCP/IP protocol. A collection of low-level NetSockets classes was chosen as the software data transfer method, enabling the use of managed connections. The server program must interact with each client independently because a system may have multiple clients (the number of clients should not be restricted by software; rather, it is determined by hardware performance and network bandwidth). It is therefore intended to divide clients into separate threads, which will be created upon receiving a signal indicating a new connection and terminated upon the user's disconnection. Several sorts of network requests must be created in order to interact with various data transmission modes, including sending, receiving, and sending and receiving at the same time.
Semantic characteristics must be used to segregate the code into distinct classes in order to adhere to object-oriented programming standards. Three primary classes can be identified by the tasks that the server program completes:
- an interface class for user interaction;
- class of client interactions on a network;
- classification of the database connection.
These classes all work together to process commands from clients. The program is initialized first, followed by the inclusion of the designated major classes. After

receiving commands from the client, the network class executes them using a helper class to communicate with the database, responds to the client if required, and displays the output of its work on the user interface. You can also use other structural linkages. Encapsulation, a programming technique that unifies data and code into a single block to shield them from outside influence and misuse, is implemented with the aid of this class division.

Data and code can be combined into an object by encapsulation, which also conceals the object's implementation from the user. In this instance, the user is merely shown the object's specification (interface). This interface is the only way for the user to interact with the item.

The real-time service information recording component must be used to ascertain the server's condition and the accuracy of client request execution. It is recommended that the server program's main window display this updated list, also known as the event log or log, so that the system administrator can access it at their convenience. This should primarily contain the outcomes of database query processing, as this is a highly vulnerable area of the system, particularly if the server software and data storage are physically located on separate systems.

The server interface must include a system user registration tool to reduce the need for additional applications. Entering the username (login or alias), real name, surname, patronymic, and password is the primary means of identification. Other user identifiers within the company, such as phone number, physical address, and email, must also be considered. The password needs to be kept in an encrypted format in the database to raise the system's security level.

The server's setup parameters for the database connection and first deployment are the final but equally important component. The administrator must be able to configure parameters for connecting to the database server so that the server can use any available host as a data source. The IP address of the computer hosting the database, the database's name, and the login credentials of a user with read, write, and update capabilities are all included in the connection parameters. Additionally, in order to create tables in the database and populate them with the required values, a utility needs to be linked to the server. This will enable you to have this document flow system ready for use without the need for third-party software — possibly even ones that are paid for — and without needing to know SQL.

The research presented the structure and functionality of an automated accounting and control system developed for digitizing and managing document flow. The system performs key functions such as document registration, distribution among employees, task execution monitoring, report generation, and internal electronic communication. Based on a client-server architecture, it enables synchronized multi-user collaboration. The server application handles client requests, interacts with the database, and returns results to the client interface. Key features include ensuring data integrity, managing user permissions, and maintaining real-time operation logs. The system also supports user registration, configuration management, and backup operations. The software architecture follows object-oriented programming principles, using modular class separation to enhance scalability and maintainability. By integrating administrative and operational functionalities into a unified platform, the system ensures secure, efficient, and structured document management. This approach improves organizational transparency, reduces the risk of data loss, and eliminates reliance on third-party tools or manual processing,

enabling reliable implementation in technical and industrial domains.

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The Methodology Of Forming Environmental Safety Principles In The Process Of Teaching Organic Chemistry

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Abstract
This article analyzes the issues of forming environmental safety principles in the process of teaching organic chemistry. The main focus is placed on developing students' responsible attitude toward the environment and shaping ecological awareness by teaching the negative impact of organic substances (plastics, petroleum derivatives, synthetic compounds) on human health and nature. Within the framework of improving environmental education and sustainable development strategies in the Republic of Uzbekistan, teaching the safe use of organic chemical substances is considered one of the key tasks. This article presents scientific and practical recommendations for teaching the ecological properties of organic compounds through chemistry curricula, teaching methods, and laboratory practices in higher education institutions.
Keywords: Organic chemistry, environmental safety, plastics, petroleum derivatives, synthetic substances, ecological awareness, sustainable development, eco-education, interdisciplinary approach, student competence.

Introduction

In recent years, the "Concept of Environmental Safety and Sustainable Development in Higher Education" (2022) [1], adopted by the Ministry of Education of the Republic of Uzbekistan, has been recognized as an important document aimed at enhancing environmental knowledge and awareness in the national education system and integrating sustainable development principles into practice.

This concept is focused on harmonizing the educational process in higher education institutions with the principles of environmental safety, strengthening interdisciplinary integration, and fostering a spirit of ecological responsibility among students. The concept emphasizes that environmental safety and sustainable development must bring broad changes not only to the economic and social spheres but also to the education system. Therefore, it is essential to cultivate knowledge related to environmental safety within traditional disciplines such as organic chemistry. Through the introduction of environmental education in higher education, students are expected not only to gain subject-specific knowledge but also to develop into responsible and environmentally conscious individuals.

Based on this concept, research is being conducted on revising teaching methodologies in organic chemistry in higher education institutions, effectively integrating environmental safety principles into the curriculum, and implementing modern laboratory practices and "green chemistry" principles. This, in turn, contributes to the preparation of qualified specialists who support Uzbekistan's environmental and economic sustainability.

Today, global ecological issues — particularly environmental pollution, the problem of waste, and the limited nature of natural resources — pose serious challenges for humanity. In particular, products of the organic chemical industry such as plastics, petroleum derivatives,

synthetic substances, and their non-degradable residues are considered among the main sources of global environmental problems [2-3].

Therefore, addressing environmental safety issues in the education system — especially through the teaching of organic chemistry — has become a pressing matter. It is crucial to provide students with in-depth knowledge about environmental protection, the impact of chemical substances on nature, and the consequences of their use. Evaluating the ecological characteristics of organic compounds during the learning process, teaching their safe use and recyclability, and promoting green technology-based approaches contribute to the development of ecological awareness and responsibility among students [4].

In the Republic of Uzbekistan, achieving environmental sustainability, promoting waste-free and safe technologies, and raising ecological culture among the younger generation are among the key priorities of state policy. In particular, within the framework of the “Concept for the Development of Environmental Education and Upbringing” (2020) and the “Green School” initiatives, significant attention is being paid to deepening the teaching of environmentally-oriented subjects in general education schools. From this perspective, developing a methodology for teaching organic chemistry based on environmental safety principles is both relevant and practically significant.

This research arises from the abovementioned necessity and aims to effectively integrate the ideas of environmental safety into organic chemistry lessons, utilizing modern teaching technologies and methods to foster ecological responsibility and competencies among students [5].

Methodological Foundations of the Research

The methodological foundations of this study are based on modern pedagogy, environmental education, the methodology of teaching organic chemistry, and general didactic principles. The research employs approaches aimed at forming environmental culture, responsible attitudes, and practical skills among students by teaching organic chemistry in accordance with environmental safety principles.

First, a scientific-theoretical approach was applied to analyze the relationship between organic chemistry and environmental safety, substantiating their role and significance in the educational process. This approach allowed for identifying opportunities to study environmentally hazardous organic substances and adapt them to the educational curriculum [6-7].

Additionally, an interdisciplinary approach was utilized to integrate chemistry, ecology, and biology in order to develop comprehensive knowledge and understanding among students. This method ensures that students learn about organic substances not only in terms of their chemical properties but also in relation to their effects on human health and the environment.

The competency-based approach focused on developing students’ practical knowledge and skills, independent thinking, and the ability to solve environmental problems. Through this, students acquire not only theoretical knowledge but also the ability to make sound decisions in real-life situations [8].

The research-based approach enabled students to study the ecological properties of organic chemical substances through independent investigation. Laboratory work, small projects, and experiments were used to develop students’ scientific worldview and observation skills.

The information and communication technology (ICT) approach contributed to

enhancing students' ability to receive and analyze information while also making the educational process more interactive and effective. Virtual laboratories, environmental hazard analysis simulations, graphs, and visual materials served as essential tools for improving the quality of education [9].

An experimental-pedagogical approach was also employed in the study, where the developed methodology was tested in school settings to assess its practical effectiveness. Through this approach, the impact of the proposed methodological materials and teaching techniques on students' knowledge acquisition was evaluated [10].

Research Results and Discussion

The integration of environmental safety principles into the teaching process of organic chemistry in higher education institutions of the Republic of Uzbekistan is of increasing importance. The conducted research revealed that incorporating an environmentally oriented approach into the teaching of organic chemistry has a positive impact on developing students' ecological awareness, interdisciplinary thinking, practical skills, and understanding of sustainable development principles.

The study was carried out with the participation of 2nd- and 3rd-year full-time and evening program students of the Chemistry Department at Navoi State University. During the lessons, topics such as "Fundamentals of Green Chemistry," "Environmentally Safe Organic Synthesis," and "Polymers and Their Impact on the Environment" were studied in depth through laboratory work, practical exercises, and interactive seminars.

In particular, discussions conducted within the topics "Alkenes, Alcohols, Phenols, and Aromatic Compounds" and "Chemical Properties of Polymers" were significant in identifying the environmental risks posed by substances that are non-biodegradable, toxic, and harmful to human health. As part of student-led environmental projects, participants proposed synthesis methods based on alternative bio-polymers, recyclable materials, and non-toxic solvents.

Moreover, laboratory sessions on "Methods of Organic Synthesis" included not only traditional techniques but also experiments that used environmentally safe ("green") reagents, aqueous reaction media, and energy-efficient methods in accordance with environmental safety standards. This approach fostered not only chemical knowledge but also ecological thinking and a culture of safety in the laboratory among students.

The research results demonstrated that environmentally focused lessons are met with high interest by students and significantly enhance their abilities to analyze independently, identify ecological problems, and propose scientific solutions. The integration of ecology-related assignments and projects, and their explanation through real-life applications, helps students connect their subject-specific knowledge with a sense of social responsibility [9].

The discussion revealed that to sufficiently address environmental safety issues in organic chemistry classes at higher education institutions, it is necessary to improve curricula, enhance laboratory facilities with eco-friendly equipment, and organize professional development courses on "green chemistry" for instructors.

In conclusion, the results of this study show that teaching organic chemistry based on environmental safety principles at universities in Uzbekistan contributes not only to developing academically competent but also environmentally responsible specialists. This approach combines both scientific and social dimensions of student development and supports the goals of sustainable development.

Conclusion

The integration of environmental safety principles into the teaching of organic chemistry in higher education institutions of our Republic is one of the urgent pedagogical tasks. The conducted research and experimental developments demonstrate that implementing environment-focused approaches within this subject allows for preparing students not only with deep theoretical knowledge but also with ecological awareness and practical responsibility.

Students' engagement in experimental and project-based work has activated their independent scientific-research activities and strengthened their competencies in solving environmental problems through chemical approaches. Additionally, the application of green chemistry principles in laboratory practices has increased students' attention to adopting safe, non-toxic methods.

Research findings indicate that teaching organic chemistry with a focus on environmental safety in higher education contributes to:

training environmentally conscious and responsible professionals;

linking chemical knowledge with real ecological issues;

strengthening interdisciplinary integration;

creating an educational model that supports sustainable development.

Based on this, methodological approaches focused on environmental safety must be supported across all higher education institutions through updated curricula, new laboratory methodologies, and modern ICT-based teaching resources. This, in turn, will serve to prepare innovative, environmentally aware, and scientifically capable specialists within the education system.

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Developing Future English Language Teachers' Professional Competence Through Independent Study

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Abstract
The professional competence of English language teachers is critical for effective teaching and improved student outcomes. Independent study, encompassing self-directed learning activities such as online courses, professional reading, and virtual communities, offers a flexible approach to professional development (PD). This systematic literature review examines how independent study contributes to the professional competence of future English language teachers, focusing on its effectiveness, challenges, and practical recommendations. Findings suggest that independent study enables personalized learning and skill enhancement, particularly through technology-facilitated platforms, but its success depends on teacher motivation, resource quality, and institutional support. Recommendations include curating high-quality resources, fostering online collaboration, and integrating independent study with formal PD programs. This review provides insights for educators, policymakers, and researchers aiming to enhance teacher development in the digital age.
Key words: English language teachers, professional competence, independent study, self-directed learning, professional development, technology-facilitated learning, online courses, virtual communities, pedagogical knowledge, classroom management, language proficiency, teacher motivation, resource quality, institutional support, continuous professional development, online collaboration, self-regulation, ELT textbooks, teacher autonomy, digital age education.

Introduction

The professional competence of English language teachers, encompassing pedagogical knowledge, classroom management, language proficiency, and adaptability, is fundamental to effective language education. As the field of English language teaching (ELT) evolves with advancements in pedagogy and technology, continuous professional development (PD) is essential to ensure teachers remain effective. Traditional PD models, such as workshops and in-service training, are often constrained by time, cost, or geographical barriers, making them less accessible for some teachers. Independent study, characterized by self-directed learning activities like online courses, reading English Language Teaching (ELT) textbooks, and participating in virtual communities, offers a flexible and accessible alternative. This approach allows future English language teachers to tailor their learning to their specific needs and schedules, fostering autonomy and professional growth.

This article reviews the literature on how independent study can develop the professional competence of future English language teachers. It explores the effectiveness of independent study, the challenges teachers face, and recommendations for optimizing its impact. By synthesizing empirical studies and theoretical frameworks, this review aims to provide actionable insights for educators, institutions, and policymakers seeking to enhance teacher development through self-directed learning.

Methods

A systematic literature review was conducted to address the research

question: How does independent study contribute to the professional competence of future English language teachers? Academic databases, including ERIC, JSTOR, and Google Scholar, were searched using keywords such as "English language teachers," "professional competence," "independent study," "self-directed learning," and "professional development." The search was limited to peer-reviewed articles, reports, and academic papers published within the last decade (2015–2025) to ensure relevance. Studies were selected based on their focus on independent study or self-directed learning in the context of English language teacher PD. Key sources included empirical studies, such as those examining teacher practices in specific contexts, and policy reports on effective PD models. Data were analyzed thematically to identify patterns related to effectiveness, challenges, and recommendations.

Results

The literature review revealed several key findings regarding the role of independent study in developing English language teachers' professional competence, summarized in Table 1.

Self-Directed Learning Initiatives

Teachers engage in various independent study activities to enhance their professional competence. For instance, a study of 24 English teachers in Iran found that private institute teachers frequently consulted online courses, watched educational videos, and read ELT textbooks, while public school teachers participated in fewer PD activities. These self-directed efforts allow teachers to update their pedagogical and linguistic knowledge at their own pace, particularly in resource-constrained environments.

Continuous Professional Development (CPD)

Research indicates that teachers value CPD and often take initiative in their professional growth. A study involving 83 EFL teachers from diverse backgrounds found high agreement on setting learning aims (M=4.76) and using self-reflection (M=4.53) to enhance teaching skills (**?**). Teachers also expressed interest in researching new teaching ideas (M=4.09) and assisting colleagues (M=4.14), suggesting that independent study complements collaborative learning efforts.

Table 1: Key Findings on Independent Study for English Language Teacher Development

Finding	Details
Self-Directed Learning Initiatives	Private English teachers in Iran engage in activities like consulting online courses, watching educational videos, and reading ELT textbooks to enhance their skills (?).
Continuous Professional Development (CPD)	Teachers value CPD and take initiative through self-reflection, researching new teaching ideas, and collaborating online, with high agreement on setting learning goals (M=4.76) and using self-reflection (M=4.53) (?).
Technology-Facilitated PD	Online, on-demand PD programs, such as those involving video viewing and forums, lead to significant student achievement gains when engagement is high (?).
Challenges and Barriers	Teachers face issues like lack of motivation, limited institutional support, and access to quality resources, impacting the effectiveness of independent study (?).
Recommendations for Practice	Needs analyses, curated resources, online communities, and alignment with institutional policies enhance independent study outcomes (?).

Technology-Facilitated PD

Technology plays a significant role in facilitating independent study. A quasi-experimental study by examined an online, on-demand PD program where teachers engaged in activities like watching videos and participating in forums. Schools with higher engagement (averaging 6 hours of video viewing) saw students improve reading achievement at four times the rate and math achievement at 30 times the rate compared to low-engagement schools (averaging 3 hours).

Challenges and Barriers

Despite its benefits, independent study faces challenges. Teachers in Iran reported varying motivations, from personal growth to institutional requirements, with some lacking motivation altogether. Other barriers include limited access to high-quality resources, insufficient institutional support,

and challenges in self-regulation, which can hinder sustained engagement.

Recommendations for Practice

To enhance the effectiveness of independent study, researchers recommend conducting needs analyses to tailor PD programs, providing access to curated resources, and fostering online communities for collaboration. Structured yet flexible learning paths, theoretical and practical activities, and alignment with institutional policies are also critical for maximizing outcomes.

Discussion

Independent study offers a promising pathway for developing the professional competence of future English language teachers, particularly in contexts where traditional PD is limited. Its flexibility allows teachers to address specific needs, such as improving pedagogical strategies or language proficiency, at their own pace. Technology-facilitated PD, including online courses and forums, enhances accessibility and fosters collaboration, as evidenced by significant student achievement gains in high-engagement settings. Moreover, independent study promotes self-efficacy and autonomy, empowering teachers to take ownership of their professional growth. However, several factors influence its effectiveness:

Motivation and Self-Regulation: Teachers must be motivated and capable of managing their learning. PD programs should include strategies to foster intrinsic motivation and self-regulated learning skills:

- **Quality of Resources**: Access to high-quality, relevant resources is essential. Institutions should curate materials and provide guidance on evaluating online content.
- **Community and Collaboration**: While independent, self-directed learning benefits from online communities that provide support and feedback, reducing isolation.
- **Institutional Support**: Schools should allocate time, resources, and recognition for independent study to encourage sustained engagement.
- **Integration with Formal PD**: Independent study can complement formal PD programs, offering opportunities to deepen learning and apply new knowledge in classrooms.

Challenges, such as lack of motivation or limited resources, highlight the need for structured support. For instance, online forums and virtual study groups can provide a sense of community, while curated resource lists ensure quality. Additionally, aligning independent study with institutional goals can enhance its relevance and impact.

In conclusion, independent study is a valuable approach for developing the professional competence of future English language teachers. By leveraging technology, fostering collaboration, and providing institutional support, educators can maximize its benefits, leading to improved teaching practices and student outcomes. Future research should explore how to integrate independent study with formal PD models and address barriers in diverse educational contexts.

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Advantages Of Building Multi-Storey Buildings In The Khorezm Oasis

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Abstract
This article scientifically justifies the need for high-rise buildings in the Khorezm oasis, taking into account the region's high groundwater levels. It explores territorial, economic, and social benefits, while also addressing modern engineering solutions to hydrogeological challenges. The paper emphasizes the efficient use of land resources, sustainable urbanization, and environmental safety.
Keywords: high-rise buildings, groundwater level, Khorezm, urbanization, construction technologies.

Introduction

The Khorezm oasis has unique geological features, and the proximity of the ground surface to the groundwater level has a significant impact on construction processes. However, there are opportunities to solve this problem through modern construction technologies, engineering approaches and planning methods. At the same time, the construction of multi-storey buildings plays an important role in improving the standard of living of the population, rational use of land resources and ensuring ecological balance.

Main part

1. Demographic pressure and the problem of land resources

Against the background of increasing population density in Khorezm, land shortage is becoming an urgent problem. Multi-storey buildings allow for the effective use of land space.

2. Proximity of the ground surface to water: problem and analysis

The groundwater level in the region is located at a depth of 2–3 meters, which creates risks associated with the depth of the foundation and soil density. This situation can lead to failures such as subsidence of buildings and cracking of walls.

3. Solutions through modern engineering approaches

Creation of artificial foundation layers: Reducing the impact of groundwater using geotextile and geosynthetic materials.

Drainage systems: Vertical and horizontal drainage networks to reduce the pressure of surrounding water. Waterproofing layers (waterproofing): Widely used to protect the foundation. Foundation design methods: Stability is ensured through SVA constructions, micro-SVA technologies.

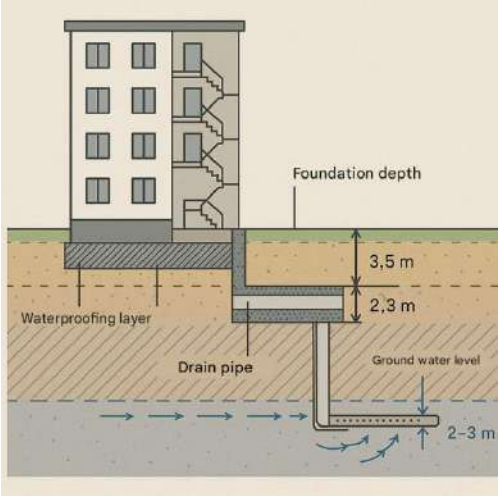

Fig 1. Modern drainage and waterproofing system diagram (1 picture)

Contents: Drainage pipes under the foundation of the building, Groundwater flow direction, Pumping stations, Geotextile layers and special membranes

Purpose: To clearly illustrate engineering approaches to groundwater control.

4. Urbanization and infrastructure benefits

Multi-storey buildings have a positive impact on the density of the city. A denser location of infrastructure such as transport, schools, and medical facilities increases the quality of services.

5. Social and economic results

It is expected to provide the population with comfortable housing, increase jobs in the construction sector, and stabilize housing prices.

6. Environmental sustainability and energy efficiency

Multi-storey buildings built on the basis of green technologies will serve to save heat and increase energy efficiency. In particular, the introduction of solar panels and smart technologies is one of the promising areas.

Conclusion

The construction of multi-storey buildings in the Khorezm oasis is not only a demographic and economic necessity, but also a strategic task that must be implemented based on scientifically based, modern engineering approaches. Although the proximity of the ground surface to water complicates this process, modern construction and drainage technologies allow us to solve this problem. As a result, sustainable urban development, a comfortable living environment for the population, and environmental safety will be ensured.

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The Role of the Human Factor in Stylistic-Syntactic Expression in German and Uzbek

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Abstract
This research examines the anthropocentric nature of syntactic and stylistic figures in the German and Uzbek languages, emphasizing the role of the human factor in linguistic expression. The study explores how human perception, emotion, and communicative intent are reflected through syntactic constructions and stylistic devices such as inversion, parallelism, ellipsis, and repetition. Using a comparative approach, the research analyzes how cultural and cognitive aspects influence the use and interpretation of these figures in both languages. The findings reveal that in both linguistic systems, stylistic-syntactic expression is deeply connected to national worldview, communicative behavior, and socio-pragmatic norms. The study contributes to a deeper understanding of human-centered language usage and highlights the universality and cultural specificity of stylistic forms in multilingual contexts.
Keywords: anthropocentrism, syntactic-stylistic figures, human factor, German language, Uzbek language, cross-cultural pragmatics, national identity

Introduction

In modern linguistics, the anthropocentric approach is based on interpreting linguistic phenomena in close connection with human activity, cognition, consciousness, and culture. This concept focuses on studying language as a social, cultural, and cognitive system, placing the human factor at the center of the linguistic framework. Such an approach views language not merely as a tool of communication, but as a medium that reflects human thought, emotional states, aesthetic perception, and cultural values.

Stylistic figures are among the expressive means of language that play an important pragmatic role in the process of communication. In particular, syntactic-stylistic figures—such as parallelism, inversion, repetition, anaphora, antithesis, and others—are appreciated as tools for conveying the author's subjective attitude, emotional state, and aesthetic taste. The choice, frequency, and stylistic function of these figures are closely tied to the speaker's cultural-national mindset, cognitive model, and speech traditions.

Although German and Uzbek belong to two different language families in terms of structure, both possess rich artistic and aesthetic expressive capacities. Therefore, a comparative anthropocentric study of syntactic-stylistic figures in these languages has significant theoretical and practical relevance. This approach helps to uncover how worldviews, values, and emotional-cultural states are expressed through linguistic means.

This article emerges from such a scholarly need and aims to analyze the structure, semantics, and functional roles of syntactic-stylistic figures in German and Uzbek through an anthropocentric lens. It also seeks to reveal manifestations of national-cultural thought as expressed through stylistic devices. The analyses presented are conducted within an integrative framework characteristic of cognitive linguistics, linguistic cultural studies, and stylistics.

Literature Review

In recent years, the anthropocentric (human-centered) approach has become one of the leading methodological principles in linguistics. This approach interprets linguistic phenomena in close connection with human cognitive activity, emotional state, aesthetic perception, and cultural values. As a result, it has become an important academic direction to study syntactic-stylistic figures not only from structural or functional perspectives but also within cultural and cognitive frameworks. When language and thought are studied as interrelated systems, stylistic figures emerge as direct indicators of this relationship.

G. Kh. Ruzikulova (2023), in her research on the anthropocentric analysis of somatic phraseological units, reveals the culturally grounded semantic layers of such expressions and emphasizes that the same methodology can be applied to stylistic devices. Z. Kh. Khamraeva (2022) conducted a comparative analysis of syntactic-stylistic means in Uzbek and English, identifying the dominant stylistic tendencies specific to each language.

In German linguistics, scholars such as E. Dittmar (2006), M. Sandig (2010), and U. Fix (2015) have analyzed the cultural and communicative functions of stylistic figures within the frameworks of linguopragmatics and discourse studies. Sandig, in particular, highlights the interactive nature of stylistic figures, while Fix evaluates their expressive potential in discourse-based contexts. These studies underscore the necessity of connecting linguistic units with speakers' communicative needs and cultural contexts. Furthermore, in cognitive linguistic approaches (e.g., G. Lakoff, M. Turner), stylistic devices such as metaphor, antithesis, and repetition are viewed as outcomes of human categorization and conceptual modeling processes. These theoretical insights contribute to a deeper anthropocentric analysis of the semantic and functional dimensions of stylistic figures.

Although the linguistic features of stylistic figures have been well studied in Uzbek linguistics, their anthropocentric, cultural-linguistic, and cognitive dimensions remain relatively underexplored. Existing studies have mostly treated syntactic figures as grammatical devices (Khamraeva, 2022), while their connection to human cognition, value systems, and cultural perception has received less attention. This gap gives rise to the scientific necessity for the present study.

This article seeks to fill that gap by offering a comparative and anthropocentric analysis of syntactic-stylistic figures in German and Uzbek. The goal is to uncover the cultural and cognitive characteristics underlying these stylistic phenomena

Methodology

This study is grounded in the principles of anthropocentric linguistics as its primary methodological approach. Anthropocentrism in linguistics refers to the analysis of language phenomena in close connection with human personality, cognition, emotions, culture, and worldview. Within this framework, language is viewed not merely as a means of communication but as a reflection of human consciousness, cultural-aesthetic worldview, and the system of national thought. Accordingly, stylistic figures—especially syntactic-level units that carry emotional, expressive, or cognitive load—become the central object of analysis in this study.

The research focuses on syntactic-stylistic figures that are frequently used in both Uzbek and German, including parallelism, inversion, repetition, anaphora, epiphora, antithesis, gradation, and climax. These figures, through their structural and semantic layers, enable language to manage attention, express emotions, highlight logical emphasis, and convey

cultural-aesthetic concepts. They represent the aesthetic-functional goals within what is described in linguistics as the stylistic semiosphere.

The corpus of data includes prose and poetic texts by German writers such as Heinrich Heine, Franz Kafka, and Bertolt Brecht, as well as contemporary socio-political texts from the German press (e.g., *Frankfurter Allgemeine Zeitung*, *Die Zeit*). In Uzbek, the sources comprise literary works by Chulpon, Oybek, Erkin Vohidov, and Hamid Olimjon, along with modern texts from literary journals such as *Yoshlik* and *Sharq Yulduzi*. In total, over 100 stylistic figures were selected and analyzed from both languages.

The analysis was conducted in the following methodological stages:

- **Identification:** Syntactic constructions potentially functioning as stylistic figures were identified within the texts.
- **Structural-Semantic Analysis:** The syntactic models, compositional roles, lexical components, and semantic load of the selected figures were examined.
- **Pragmatic-Cognitive Evaluation:** The emotional, expressive, or culturally conceptual meanings conveyed through these figures were assessed.
- **Comparative Analysis:** The stylistic figures in German and Uzbek were compared to highlight their universal features as well as culturally specific characteristics.

As a methodological foundation, elements of comparative linguistics, cognitive linguistics, discourse pragmatics, and corpus linguistics were integrated. This combination enabled analysis not only on a structural-formal level but also from a cultural-cognitive perspective.

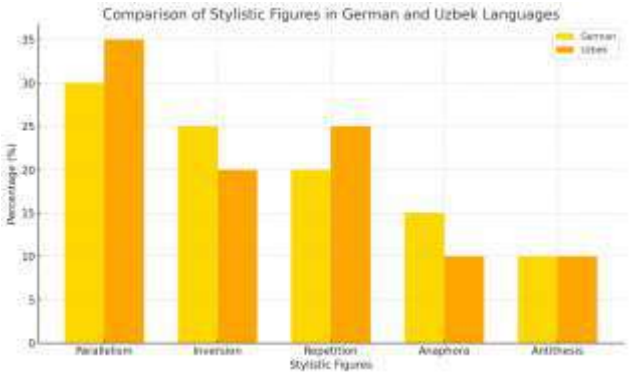
Through this methodology, the role of stylistic figures as aesthetic and psychological tools in language, and their connection to the semiosphere of human thought and culture, was clarified. The study demonstrates that syntactic-stylistic figures in both languages perform universal communicative functions while simultaneously embodying national-cultural connotations tied to each linguistic worldview.

Results

As a result of the comparative anthropocentric analysis of syntactic-stylistic figures in German and Uzbek, it was clarified that alongside significant similarities in structural, cultural, and expressive features of both languages, notable differences also exist. These differences and similarities primarily illuminate the anthropocentric essence of language, highlighting its role in human cognition, aesthetics, and cultural perception.

During the research, a corpus of literary and journalistic texts in Uzbek and German was used. The syntactic-stylistic figures identified and analyzed in these texts include: parallelism, inversion, repetition, anaphora, and antithesis. Each figure was evaluated not only as a stylistic device but also as a linguistic unit carrying specific cultural and spiritual connotations.

Figure 1. Cultural Dominance of Parallelism and Repetition



Based on these statistical indicators, it was identified that in Uzbek, figurative devices such as parallelism (35%) and repetition (25%) are used with high frequency. This corresponds to the emotional-aesthetic character of the Uzbek literary language,

particularly reflecting its poetic thinking rooted in musicality, melodiousness, and folklore traditions.

In German, inversion (25%) and parallelism (30%) hold leading positions, demonstrating the language's functional capacity to create logical and rhetorical effects through syntactic constructions.

Parallelism is intensively used in both languages, but its purpose and stylistic meaning differ: in German, it serves as a means of creating logical and rhetorical structures, whereas in Uzbek, it functions to generate rhythmic-emotional emphasis and imagery. Repetition, meanwhile, primarily provides emotional intensity, folkloric resonance, and aesthetic power in Uzbek, while in German its functional aspect is directed towards rhetorical reinforcement.

Anaphora and antithesis appear at moderate frequencies in both languages. In German, anaphora is widely used as a tool for semantic progression, while in Uzbek it is considered an integral part of poetic structure. Antithesis is employed to convey general summarizing expressions with dramatic force, occurring at a rate of 10% in both languages, thereby exhibiting its universality as a stylistic device.

These analyses illustrate that each language selects its stylistic figures based on its cultural model, linking them integrally with its linguistic system, national worldview, and cultural values. While German emphasizes structural precision and rhetorical logic, Uzbek centers on poetic freedom, emotional expression, and imagery. This observation, within the framework of an anthropocentric linguistic approach, demonstrates that stylistic figures at the syntactic level are not merely formal elements but are also products of cognitive-semiotic thought.

Conclusion

Based on the data analyzed, it can be concluded that syntactic-stylistic figures hold an important place in the language system not only as aesthetic and emotional devices but also as reflections of human cognition, cultural values, and communicative needs. The comparative anthropocentric analysis of syntactic-stylistic figures such as parallelism, inversion, repetition, anaphora, and antithesis in German and Uzbek has illuminated the practical and theoretical interconnections between language and thought.

The research revealed that each language forms its stylistic figures based on its national-cultural cognitive model, enriching them with functions specific to their cultural contexts. In Uzbek, these figures manifest predominantly in a poetic, emotional, and figurative style, whereas in German they serve syntactic precision, rhetorical force, and logical composition. This reflects each language as an embodiment of its society's worldview and historical-cultural experience.

From an anthropocentric perspective, stylistic figures are not merely syntactic variations but cognitive models expressed at the structural and functional levels of human thought**.** They enable individuals not only to convey their ideas but also to aestheticize, intensify, formalize, and situate them within their cultural contexts.

Furthermore, the study established that these figures are motivated linguistic units rather than arbitrary elements. For instance, parallelism in Uzbek is deeply tied to folkloric aesthetics and musicality, while in German it is closely connected to rhetorical structure. Repetition is used in Uzbek texts to amplify emotions and create folkloric resonance, whereas in German it serves to emphasize semantic focus. Similar cultural and functional differences were observed in the usage of inversion, anaphora, and antithesis.

The main scientific results derived from this study are as follows:

- Syntactic-stylistic figures should be regarded not only as formal units in linguistics but also as functional and cultural models of human cognition.
- Each stylistic figure carries a cognitive-emotional load that reflects national mentality and cultural identity through linguistic means.
- An anthropocentric approach allows for a deeper analysis of the relationship between structure and meaning in linguistics.
- Uzbek and German demonstrate diverse cognitive-aesthetic styles that can be comparatively analyzed for their stylistic features.
- These findings provide a valuable theoretical basis for practical applications in foreign language teaching, translation studies, intercultural communication, and stylistics.

In conclusion, language is not merely a means of communication but a cultural-abstract reflection of human thought, and syntactic-stylistic figures are vivid grammatical and stylistic manifestations of this reflection. Their scientific analysis through an anthropocentric approach enables the study of language within the modern linguistic framework, grounded in cognitive, cultural, and functional criteria.

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How Artificial Intelligence Helps In Learning The German Language

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Abstract
In recent decades, Artificial Intelligence (AI) has become a powerful tool in the field of linguistics and language learning, including German. The article examines how AI technologies contribute to learning the German language as a foreign language, automating linguistic analysis, and developing natural language processing methods. Key applications include machine translation systems, intelligent language assistants, adaptive learning platforms, and grammar checking systems. Special attention is given to machine learning technologies and big data processing, which enable personalized learning, provide accurate recommendations for study, and support error correction. Examples include the use of speech recognition and synthesis systems to improve listening and pronunciation skills. The article concludes by discussing the prospects of further developing AI technologies in German language learning, including the potential integration of virtual reality and advanced analytics to create an immersive educational experience.
Keywords: artificial intelligence, German language, linguistics, machine learning, natural language processing, educational technologies.

INTRODUCTION

Modern technologies are actively transforming many aspects of life, including education and foreign language learning. One of the most significant innovations of the last decade has been Artificial Intelligence (AI), which finds widespread application in various fields, including linguistics and teaching methodology. In the context of learning the German language, known for its complex grammar, rich vocabulary, and deep cultural layers, AI opens up new horizons to improve the efficiency, accessibility, and individualization of the learning process.

The development of AI technologies has made it possible to introduce automated tools such as language models, adaptive learning platforms, text and speech analysis software, and interactive applications. These technologies enable students to learn German according to their individual needs and knowledge level, offering adaptive assignments, error correction, and instant feedback. Moreover, AI contributes to removing language barriers thanks to machine translation tools and helps learners immerse themselves in the language environment through dialogue simulations and voice assistants.

The aim of this study is to investigate how artificial intelligence technologies affect the process of learning the German language, which methods and approaches are used in AI-based educational platforms, and what prospects and challenges are associated with their use. To achieve this goal, existing tools are examined, including automated learning systems and applications for learning German, and their advantages and limitations are analyzed.

Thus, studying the role of artificial intelligence in teaching the German language is a relevant scientific task that not only helps identify the key benefits of AI technologies but also allows evaluating

their potential in creating effective educational solutions.

LITERATURE REVIEW

In recent years, artificial intelligence (AI) has played an important role in various fields, including foreign language learning. The German language, as one of the most complex and rich in the world, poses a special challenge for those learning it as a second language. With the help of AI technologies, it has become possible to significantly improve learning processes and increase the effectiveness of German language acquisition. This review discusses the methods and technologies by which artificial intelligence assists learners in mastering the German language.

Development of AI Technologies and Their Impact on Language Learning

AI technologies, including machine learning, neural network algorithms, natural language processing, and speech recognition, are developing rapidly and are having an increasingly noticeable impact on education. AI facilitates the creation of adaptive learning systems that can consider individual learner characteristics, provide personalized recommendations, and accelerate the language acquisition process.

The application of AI in language learning includes automatic assessment systems, communication chatbots, as well as machine translation and speech systems that impact the effective acquisition of language structures, vocabulary, and pronunciation.

Machine Translators and Text Processing Tools

One of the most popular and convenient tools is machine translation. Modern machine translation systems such as Google Translate, DeepL, and Yandex.Translate use neural network algorithms to translate texts between languages. For learners of German, these tools provide fast and understandable feedback on translation, which helps accelerate understanding of the language structure and improve vocabulary comprehension.

However, despite the success of machine translators, they still do not always accurately convey nuances of meaning, especially in the context of grammar and stylistics of the German language. In this regard, AI can help not only in translation but also in text correction, offering more accurate and grammatically correct alternatives.

Software and Applications for Language Learning

Many educational applications now use AI to enhance the learning process. For example, Duolingo, Babbel, and Rosetta Stone incorporate technologies that support adaptive learning, helping users to learn German at their own pace, starting from simple phrases to more complex constructions.

With the help of AI, such applications analyze each student's progress, identify weak points, and offer personalized tasks that support deeper learning of the material. This allows the learner to improve their skills in listening, speaking, reading, and writing, and also actively develop phonetic and grammatical abilities.

Speech Recognition and Pronunciation Improvement

One of the important tasks in learning German is correct pronunciation. Applications that use AI for speech recognition, such as Google Speech Recognition or iSpeech, help learners improve pronunciation by providing feedback on accents, intonation, and sound articulation, which is extremely important for German with its sounds that are often difficult for foreign students (for example, the sounds "ch", "ü", and "ä").

AI can analyze a student's speech and compare it with reference samples, pointing out errors and suggesting ways to correct

them. This is especially important for auditory and real-time learners, as it minimizes the impact of dialects and accents.

Chatbots and Virtual Assistants for Communication

Interactive chatbots based on AI allow students to actively practice the language in real time. Chatbots such as Replika or specialized language learning applications can offer users the opportunity to communicate in German, which helps to practice grammar and vocabulary in everyday situations. These systems can understand entered text, answer questions, and even maintain full conversations with users.

The opportunity to communicate with a virtual interlocutor allows users to study German speech in a comfortable environment, practice communication skills in various contexts (e.g., in a restaurant, at a train station, or in a store), which is important for adapting to the language environment.

Adaptive Assessment and Learning Systems

AI is actively used to create personalized educational programs, where each student receives tasks that match their current knowledge level and learning preferences. For example, platforms such as Lingvist and Busuu offer adaptive courses that become more difficult or easier over time, depending on how effectively the learner masters the material.

Such systems can even detect minor mistakes made by learners and, based on machine learning, offer accurate corrections, making the learning process more effective. AI can also offer suggestions for improving pronunciation and sentence construction based on common mistakes and weaknesses identified during learning.

CHALLENGES AND LIMITATIONS OF USING AI IN LANGUAGE LEARNING

Despite numerous advantages, the use of AI in learning the German language also has its limitations. Certain aspects of language, such as emotional tone, contextual meanings, or cultural characteristics, are difficult to fully convey through artificial intelligence. AI also cannot replace live communication with native speakers, which remains a crucial element in mastering a language.

Moreover, AI systems may have limited ability to interpret ambiguous words and phrases, especially in written form, which may lead to misunderstandings.

Artificial intelligence significantly improves the process of learning German by providing students with effective tools for learning, from automatic translators to virtual conversation partners. However, it is important to remember that AI technologies, despite their relevance and convenience, cannot fully replace live interaction and the role of the teacher. Therefore, the use of AI should complement traditional teaching methods, creating a hybrid system that ensures the best results in learning German.

METHODS

Artificial intelligence (AI) has a significant impact on various fields of science and education, including language learning. In recent decades, AI technologies such as machine learning, neural networks, and big data analysis have played an important role in creating new methods and tools for learning the German language. The main methods by which AI supports German language learning include:

Automatic Translation

Modern translation systems like Google Translate and DeepL use neural networks and machine learning models to translate text from one language to another. These systems analyze context, grammar, and syntax, which helps learners better understand German texts. Translation can

be especially helpful when reading complex texts.

Advantages:

- Fast assistance in translating unfamiliar words or phrases.
- Improved comprehension of German texts.
- Enhanced translation and interpretation skills.

Disadvantages:

- Limited accuracy with idiomatic expressions.
- Contextual and grammatical errors in complex sentences.

Speech and Text Assistants

AI supports pronunciation and written language learning through speech recognition systems and text analyzers. Applications like Yandex Translate and Speechling help improve pronunciation and correct errors through automatic analysis.

Advantages:

- Pronunciation feedback.
- Use of speech synthesis to mimic conversational language.
- Increased confidence in speaking German.

Disadvantages:

- Limited understanding of accents and dialects.
- Difficulty recognizing unclear or distorted pronunciation.

Chatbot Practice

Many online courses and platforms use AI-powered chatbots to simulate real communication, helping students develop speaking skills. Platforms like Duolingo and Babbel tailor exercises to the user's knowledge level.

Advantages:

- 24/7 language practice availability.
- Real-life context communication simulations.
- Individualized lessons.

Disadvantages:

- Lack of emotional response and natural nuance.
- Limited vocabulary and topic range.

Text and Grammar Analysis

AI is used for grammar and text structure analysis to identify and correct errors, improving writing quality. Tools like LanguageTool and Grammarly teach correct grammar usage.

Advantages:

- Instant grammar and style checks.
- Guidance on using different grammatical structures.
- Support for writing essays and compositions.

Disadvantages:

- Challenges in understanding complex context.
- Inaccurate corrections in complicated grammar structures.

Personalized Learning Programs

AI can analyze student behavior and learning outcomes to recommend personalized programs. Algorithms assess strengths and weaknesses to suggest appropriate exercises.

Advantages:

- Customized learning experiences.
- Focused improvement in weak areas.
- Accelerated progress.

Disadvantages:

- Requires large data volumes for accuracy.
- Can be costly for widespread adoption.

Use of Big Data and Neural Networks for Content Generation

AI can analyze vast textual data to create new learning materials. Neural networks generate texts appropriate to learner levels and identify frequent word and structure usage for vocabulary and grammar study.

Advantages:

- Creation of unique educational content.
- Automated exercise and test generation.
- Analysis of authentic texts.

Disadvantages:

- Potential inaccuracies in generated content.
- Reliance on data quality used for AI training.

RESULTS AND DISCUSSION

Modern technologies and AI play a vital role in education, including language acquisition. Learning foreign languages, including German, has become more accessible through AI integration. Recent progress includes intelligent systems providing personalized learning, error correction, and interactive and adaptive study materials.

AI Technologies in Learning German

Today, AI offers multiple opportunities:

- Automatic error correction: Grammar, spelling, and punctuation.
- Machine translation: Deep learning models translating complex sentences.
- Speech technologies: Recognizing and evaluating spoken German.
- Adaptive learning platforms: Personal lessons and tasks.
- Chatbots: Practicing communication in real-life scenarios.

Advantages:

- 24/7 access and personalization.
- Interactive and motivating platforms.
- Fast feedback and error correction.
- Various learning formats (text, audio, video).

Challenges:

- Need for constant data and algorithm updates.
- Weakness in interpreting context and emotional nuances.
- Overreliance on technology may harm traditional skills.

Table 1. Features of Using AI in Learning German

FEATURE	ADVANTAGES	DISADVANTAGES
AUTOMATIC GRAMMAR CHECKING	Speed and accuracy	Possible errors with complex structures
TEXT GENERATION	Develops writing skills	May produce unnatural texts
INTERACTIVE PLATFORMS	Increased motivation	Limited vocabulary diversity

CONCLUSION

Artificial intelligence has become a key educational tool, including in learning the German language. It simplifies the learning process by automating grammar analysis, error correction, and style checking. AI-based applications help learners detect and fix mistakes efficiently, improving language proficiency.

Furthermore, AI assists with pronunciation practice by providing feedback and allowing repetition. Chatbots and virtual assistants offer a safe environment for conversational training, supporting confidence and fluency. Machine translation tools help users understand and apply new words contextually. AI adapts to each learner's needs by analyzing knowledge levels and offering customized recommendations, optimizing the learning experience.

In conclusion, AI significantly enhances the process of learning German by offering diverse tools for practice, error correction, and deeper understanding. As AI integration in education evolves, it will further expand access, personalization, and effectiveness in language learning.

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The Role Of Youth And Science In Achieving Economic Sustainability

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Abstract
This article discusses the Sustainable Development Goals (SDGs) and public perceptions regarding their implementation, as well as the methods for measuring sustainable development. It focuses primarily on the concepts of sustainable development and sustainable well-being, the indicators and systems necessary for their realization, and the differences between countries in this process. The article also emphasizes the importance of transparency and data openness, based on clearly defined objectives, in achieving efficiency in the implementation of the SDGs.
Keywords: Sustainability, social and economic development, global, international cooperation, environmental protection.

Introduction

As is widely known, improving citizens' well-being in today's modern economy must be comprehensive and sustainable. In this regard, the goals of sustainable well-being should be based on three main pillars: economic growth, social inclusion, and environmental protection. These pillars consist of both qualitative and non-monetary, as well as measurable financial and quantitative indicators. Although sustainable development is now a priority on the agenda of many governments, measuring its progress remains a complex task due to the multifaceted nature of some of its goals. In the modern world, youth—as the most dynamic segment of society—play a crucial role in the advancement of science and innovation. The Republic of Uzbekistan's Sustainable Development Strategy for 2030 places a special emphasis on the involvement of young people in education and science. As noted by the President of Uzbekistan, Shavkat Mirziyoyev:

"The intellectual potential and innovative ideas of young people are a key factor in achieving sustainable development."[1] The active participation of youth in scientific projects, the implementation of new technologies, and their efforts in environmental protection are of particular importance in achieving the Sustainable Development Goals.

Analysis of the Literature Used

It is evident that scientific literature on the Sustainable Development Goals (SDGs) examines the factors of sustainable development of individuals, societies, and nations from various perspectives. The literature reviewed in this study highlights the main theoretical and practical approaches related to the topic:

Adibi, S**.** discusses the development of mobile health technologies and their role in stabilizing healthcare systems. The work focuses on innovative approaches and the importance of international cooperation in promoting sustainability through technology. The United Nations Millennium Development Goals (MDGs) **Report**

[1] https://uz.wikipedia.org/wiki/Sog'liqni_saqlash

outlines the challenges faced in achieving the MDGs and emphasizes the significance of global cooperation in the successful implementation of these goals.

The United Nations 2030 Agenda for Sustainable Development provides a comprehensive description of the 17 SDGs and discusses the issues related to global collaboration, policy coordination, and resource allocation necessary for their achievement. The work of Islam Karimov**,** the first President of the Republic of Uzbekistan, presents long-term strategic planning related to Uzbekistan's development. In connection with the SDGs, this source examines national-level progress and the challenges encountered.

National Reports on Sustainable Development by the Cabinet of Ministers of the Republic of Uzbekistan provide an in-depth analysis of how the SDGs are being implemented within the country. These reports present comprehensive data and evaluations on the progress of sustainability initiatives in Uzbekistan.

Methodology

In this study, we employed the **SWOT analysis** (Strengths, Weaknesses, Opportunities, Threats) as an effective tool for deeply analyzing the opportunities and challenges in the implementation of the Sustainable Development Goals. Moreover *"SWOT analysis is an excellent strategic tool for identifying the strengths and weaknesses of a business or project activity, exploring opportunities, and managing threats."*[2]

Analysis and Results

The following SWOT analysis outlines the key factors influencing the achievement of Sustainable Development Goals (SDGs), emphasizing the role of international organizations, climate change, natural disasters, and related dynamics:

Table 1.

SWOT Analysis on the Theme: "YOUTH AND SCIENCE – A KEY FACTOR FOR SUSTAINABLE DEVELOPMENT"[3]

Strengths	**Weaknesses**
• Global cooperation and policies – Strong collaboration among countries, organizations, and the private sector in the implementation of SDGs. • Distribution of resources and knowledge – The global distribution of resources and knowledge creates opportunities for development across nations. • Social inclusion and equality – The principle of "leaving no one behind" defines the core approach to ensuring social equity. • The role of the UN and international organizations – Institutions such as the UN play an active role in enhancing intergovernmental cooperation and promoting global planning.	• Political and economic disparities – Instability and economic inequality between countries may slow down the development process. • Human resources and education levels – Inadequate education systems and underdeveloped human capital in some countries hinder sustainable progress. • Poverty and inequality – Complex challenges in eliminating socio-economic disparities can decelerate development. • Resource scarcity – Limited access to natural resources can be a significant obstacle to achieving SDGs.
Opportunities	**Threats**

[2] https://www.imd.org

[3] Prepared by the author

• Technological advancements – Utilization of green energy, data analytics, and artificial intelligence offers great potential for accelerating sustainable development. • International financial aid and investment – There is potential to support economic growth in developing countries through global financial assistance and foreign investment. • Access to education and knowledge – Improving education systems can enable broader societal participation in the development process. • Emerging economic models – The application of models such as Doughnut Economics may contribute to a more inclusive and sustainable global economy.	• Climate change and natural disasters – Environmental risks can seriously undermine development progress. • Economic crises and instability – Global market disruptions and political unrest may negatively affect economic sustainability. • Resource shortages – Limited natural resources can obstruct sustainable development efforts. • Global pandemics – Health crises like pandemics pose a significant threat to economic and social stability.

As a result of the presented SWOT analysis, it is evident that achieving sustainable development requires strengthening global cooperation, ensuring the equitable distribution of resources and knowledge, and introducing innovative technologies. Although there are existing threats, sustainable development can be achieved through effective strategies and approaches focused on social inclusion.

Conclusion and Recommendations

In this article, we attempted to analyze the Sustainable Development Goals (SDGs), public perceptions of their implementation, as well as the methods, indicators, and cross-country differences in measuring sustainable development. In this regard, the President of the Republic of Uzbekistan, Shavkat Mirziyoyev, has rightly emphasized: "To achieve the Sustainable Development Goals, it is essential to strengthen international cooperation and to carry out consistent reforms in the areas of education, healthcare, and environmental protection."[4]

Indeed, achieving the Sustainable Development Goals (SDGs) is not possible through the efforts of a single country alone, but rather through global cooperation and a coordinated approach. This process involves several key factors. First, the exchange of knowledge and technology between countries; second, the efficient allocation of financial resources; and third, the sharing of experience and best practices, all of which are of vital importance.

In particular, to ensure sustainable development in the field of education, it is crucial to develop modern teaching methods, utilize digital technologies, and implement programs aimed at fostering universal human values. The development of the healthcare system should not only focus on treating diseases but also on strengthening preventive measures,

[4] Shavkat Mirziyoyev (2024) — Statement on Sustainable Development and International Cooperation https://president.uz/oz/lists/view/7815

promoting a healthy lifestyle, and making medical services accessible to all segments of the population. Regarding environmental protection, consistent efforts should be made to introduce environmentally friendly technologies, use renewable energy sources, and manage natural resources wisely.

In this regard, the following recommendations could prove effective:

1. Developing strategic partnerships with regional and global organizations – this will expand opportunities for experience and resource sharing on sustainable development.
2. Creating and implementing specialized educational programs on sustainable development – this will help foster environmental awareness and social responsibility among youth through the education system.
3. Expanding telemedicine services – essential for increasing healthcare coverage and improving medical service delivery to populations in remote areas.
4. Accelerating the transition to renewable energy sources – a key factor in ensuring environmental security and reducing carbon footprints.
5. Establishing a special fund for sustainable development projects – this initiative will ensure financial stability and simplify the financing of large-scale environmental projects.

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Exploring the Richness of Spanish Phraseology: Linguistic, Cultural, and Cognitive Perspectives

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Abstract
Spanish phraseology, as a vibrant and integral part of the language, encompasses idioms, set expressions, proverbs, and collocations that reflect the culture, worldview, and cognitive processes of Spanish-speaking communities. This article provides an in-depth exploration of the phraseological richness of the Spanish language by focusing on the structural types, functions, and semantic domains of phraseological units. Special emphasis is placed on their cultural significance, symbolic meanings, and pragmatic roles in communication. Through illustrative examples, the paper examines how phraseological expressions serve as linguistic repositories of historical, emotional, and cultural experiences. It also addresses challenges in translating and interpreting idiomatic expressions across languages and proposes didactic approaches for teaching Spanish phraseology to non-native speakers.
Keywords:
Spanish phraseology, idioms, proverbs, collocations, cultural linguistics, cognitive linguistics, translation, pragmatics, teaching Spanish, fixed expressions.

Phraseology, understood as the study of fixed or semi-fixed combinations of words that carry specific meanings, plays a fundamental role in shaping the expressive power of any language. In Spanish, phraseological units—commonly known as *frases hechas*, *locuciones*, or *modismos*—offer a window into the cultural and cognitive landscape of the Spanish-speaking world. These expressions not only enrich the language stylistically but also preserve collective memory, convey emotional states, and maintain social norms.

Spanish phraseology includes a wide array of constructions, from idioms like *estar en las nubes* (to be daydreaming) and *tirar la toalla* (to give up), to proverbs such as *a caballo regalado no se le mira el diente* (don't look a gift horse in the mouth). These fixed expressions often carry meanings that are not directly deducible from the sum of their parts, thereby requiring both linguistic competence and cultural familiarity for full comprehension.

The study of Spanish phraseology involves several dimensions: linguistic (structure and semantics), cultural (origin and usage in context), and cognitive (metaphoric thinking and conceptualization). This holistic approach reveals how phraseological units function as building blocks of discourse and bearers of cultural knowledge.

One widely accepted typology of phraseological units in Spanish categorizes them into three main groups: collocations, idioms, and proverbs. Collocations, such as *tomar una decisión* (to make a decision), are word combinations that are frequent and semantically cohesive but do not carry figurative meaning. Idioms, in contrast, have figurative or metaphorical meanings—*estar entre la espada y la pared* (to be between a rock and a hard place)—and often resist literal translation. Proverbs are standalone expressions that encapsulate general truths or moral lessons, for instance, *más vale tarde que nunca* (better late than never).

Phraseological units in Spanish often revolve around specific semantic domains

such as the body, food, animals, colors, and nature. These domains serve as fertile ground for metaphors and idiomatic expressions. For instance, body parts are commonly used to refer to emotions or character traits—*tener la cabeza en su sitio* (to be sensible), *no tener pelos en la lengua* (to speak one's mind). Food idioms—*estar como un queso* (to be attractive)—or animal-based expressions—*ser un gallina* (to be a coward)—also abound.

From the cognitive linguistic perspective, idioms are conceptual metaphors that map one domain onto another. The expression *quedarse en blanco* (to go blank), for example, metaphorically connects the domain of color with the state of memory failure. This supports the idea that phraseological units are not random artifacts of language, but structured reflections of human cognition and perception.

Many Spanish idioms and proverbs have deep historical roots that trace back to Latin, Arabic, and indigenous languages, reflecting the linguistic and cultural syncretism of the Iberian Peninsula and Latin America. For example, the idiom *no hay moros en la costa* (the coast is clear) harks back to the Reconquista period when the presence of Moors on the coastline posed a threat to Christian ships. Over time, such expressions have become conventionalized, their original contexts fading while the figurative meanings persist.

Regional variations are also notable. A phrase common in Spain may be rare or nonexistent in Latin America, and vice versa. For instance, *estar hasta la madre* (to be fed up) is commonly used in Mexico, whereas *estar hasta las narices* is more frequent in Spain. These regionalisms contribute to the richness and diversity of Spanish phraseology.

Phraseological units serve various communicative functions: expressive, stylistic, rhetorical, and pragmatic. They allow speakers to express emotions, humor, sarcasm, or criticism with nuance and cultural relevance. They also enhance textual cohesion and memorability in spoken and written discourse.

In pragmatic terms, phraseological units often serve as politeness strategies, especially in indirect speech acts. For instance, instead of directly criticizing someone, one might say *cada loco con su tema* (to each their own). Similarly, expressions like *ojalá* (let's hope) or *Dios dirá* (God will tell) help convey uncertainty or resignation while maintaining social harmony.

Literature, cinema, and popular music are fertile sources for both traditional and innovative phraseological expressions. Writers like Miguel de Cervantes and Gabriel García Márquez are known for their creative use of idiomatic language. Cervantes's *Don Quijote* is replete with idioms, proverbs, and proverbial wisdom that reflect the social and moral codes of the Spanish Golden Age.

Contemporary media continue to shape and reshape Spanish phraseology. Telenovelas, memes, and social networks contribute to the coinage of new idiomatic expressions or the recontextualization of old ones. This dynamic nature makes phraseology a living, evolving component of the language.

Translating Spanish phraseological units into other languages presents significant challenges. Idiomatic meaning often resists word-for-word translation due to cultural specificity and metaphorical complexity. For example, *buscarle tres pies al gato* (to make things unnecessarily complicated) cannot be translated literally without losing its figurative meaning.

Translators must often choose between preserving the idiomatic flavor and ensuring communicative clarity. Strategies include finding equivalent idioms in the target language, explaining the expression, or

substituting it with a more culturally neutral alternative. Such decisions require deep knowledge of both source and target cultures.

Teaching phraseological units to non-native speakers is essential for achieving communicative competence and cultural literacy. However, traditional language instruction often overlooks this aspect due to its perceived complexity. To address this gap, educators can incorporate phraseological expressions into vocabulary teaching, reading comprehension, and speaking activities.

Visual aids, contextual learning, and comparative analysis of idioms across languages can facilitate learning. Digital tools and corpora also allow learners to explore phraseology in authentic contexts. Encouraging students to use idioms in their speaking and writing fosters natural and culturally appropriate communication.

Spanish phraseology is a multifaceted and culturally rich component of the language that reflects the lived experiences, emotions, and cognitive patterns of its speakers. From traditional proverbs to modern memes, phraseological units serve as dynamic carriers of meaning and identity. Understanding and mastering Spanish phraseology requires an interdisciplinary approach that integrates linguistics, culture, and pedagogy. As language learners and scholars deepen their engagement with these expressions, they unlock new dimensions of communicative competence and intercultural understanding.

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The Phraseological Landscape of the Spanish Language: Expressions of Identity, Emotion, and Cultural Wisdom

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Abstract
This article examines the phraseological richness of the Spanish language, emphasizing its role in conveying cultural identity, emotional expression, and historical memory. Spanish idiomatic expressions, proverbs, and collocations not only add stylistic vibrancy to communication but also encode centuries of cultural values and social behavior. The article analyzes the structure, meaning, and cultural context of Spanish phraseological units and explores their use in everyday interaction, literature, and media. It also considers pedagogical strategies for teaching Spanish phraseology to foreign learners and discusses the complexities involved in translating idiomatic language across cultures.
Keywords: Spanish idioms, phraseological units, cultural identity, proverbs, idiomatic expressions, Spanish language, metaphor, translation, teaching Spanish, linguistic culture.

Phraseological expressions in Spanish represent one of the most fascinating and culturally loaded elements of the language. They reveal how speakers of Spanish conceptualize the world, relate to each other, and transmit cultural knowledge. Unlike individual words, phraseological units carry layers of meaning that go beyond the literal, combining linguistic structure with emotional, historical, and symbolic resonance.

The Spanish language is abundant in fixed and semi-fixed expressions that span from colloquial idioms to classical proverbs, from formal locutions to humorous sayings. These expressions function not only as tools for communication but also as markers of social belonging and linguistic creativity. Many of them are learned early in life and become deeply ingrained in the speaker's communicative habits, often surfacing unconsciously in everyday speech.

The phraseological inventory of Spanish includes idiomatic phrases that are metaphorical and figurative in nature, such as "estar frito" (literally, "to be fried," meaning "to be in trouble") or "meter la pata" (to put one's foot in it, i.e., to make a mistake). These expressions cannot be understood by simply analyzing the literal meanings of the words they contain. Instead, they require cultural and contextual awareness to be correctly interpreted and used.

Some expressions have religious, historical, or literary origins. For example, "lavarse las manos" (to wash one's hands of something) echoes the biblical story of Pontius Pilate and signifies avoiding responsibility. Others are based on everyday experiences or the natural world, like "llover a cántaros" (to rain cats and dogs), drawing from the imagery of heavy rainfall.

The metaphorical nature of many idioms reflects a cognitive dimension in language use. According to conceptual metaphor theory, people understand abstract concepts through more concrete or sensory experiences. This is evident in Spanish idioms that use the body to express emotional or psychological states, such as "tener mariposas en el estómago" (to have butterflies in one's stomach) or "quedarse sin palabras" (to be left speechless). These expressions reveal how human experiences are structured and expressed through metaphor.

Colors also play a significant role in Spanish phraseology. Expressions like “ponerse rojo como un tomate” (to turn red like a tomato) or “verlo todo negro” (to see everything black, meaning pessimism) show how visual perception is linked to emotional and psychological evaluation. Similarly, animal metaphors are common, often carrying connotations of behavior, personality, or social roles. A person who is “un zorro” (a fox) is considered cunning, while someone who is “una oveja negra” (a black sheep) is a social outcast.

Phraseology is deeply connected to culture, and many idioms are specific to particular regions of the Spanish-speaking world. An idiom popular in Argentina may not be familiar in Spain, or it may have a different meaning altogether. For instance, the phrase “estar en la luna” (to be on the moon) is commonly used across Spanish-speaking regions to describe someone who is distracted, but variations in pronunciation, emphasis, or accompanying gestures may change its nuance. These regional differences contribute to the dynamic and diverse character of Spanish phraseology.

In addition to their metaphorical richness, phraseological expressions often serve pragmatic functions in conversation. They can soften criticism, reinforce social norms, or build solidarity among speakers. For example, instead of directly stating that someone is wrong, a Spanish speaker might say “cada loco con su tema” (every madman has his own theme), a humorous and indirect way to express disagreement without confrontation. Idioms can also provide closure to arguments or conversations, such as “a lo hecho, pecho” (what’s done is done).

In literature, Spanish phraseology serves as a powerful stylistic device. Authors use idioms and proverbs to develop character voices, express cultural settings, and evoke emotional reactions. In *Don Quijote de la Mancha*, Miguel de Cervantes integrates hundreds of idiomatic expressions that reflect the worldview and speech patterns of early modern Spain. The use of phraseology allows writers to connect with readers on a deeper level by invoking shared cultural knowledge and familiar linguistic patterns.

The media and popular culture continue to shape and renew Spanish phraseology. New idioms emerge in response to technological changes, political events, or social trends. Internet culture, particularly memes and social media language, has generated expressions such as “me explotó la cabeza” (my head exploded), used to express surprise or amazement. These neologisms enrich the phraseological reservoir of Spanish and show the language’s adaptability.

Teaching Spanish phraseology to foreign learners presents unique challenges. Because idioms are culture-bound and often resist literal translation, students may struggle to grasp their meaning or use them appropriately. However, mastering phraseology is essential for achieving fluency and cultural competence. Language instruction should integrate idiomatic expressions into vocabulary lessons, dialogues, and listening activities. Visual aids, role-playing, and comparison with students’ native languages can facilitate learning and make idioms more memorable.

It is also important to provide cultural context when teaching idioms. Explaining the historical or metaphorical origins of an expression can help learners appreciate its meaning and remember it more effectively. For example, teaching the idiom “tirar la casa por la ventana” (to spare no expense) becomes more engaging when students learn that it originates from 18th-century Spain, when families literally threw furniture out the windows during celebrations.

Another effective pedagogical approach is the use of corpora and authentic materials,

such as films, songs, or newspaper articles, which expose learners to phraseology in natural contexts. Encouraging students to identify and use idiomatic expressions in their own speaking and writing helps them internalize the language and develop communicative competence.

Phraseological translation is another complex area, requiring not only linguistic skills but also cultural sensitivity. Literal translations often fail to convey the intended meaning or emotional impact of idioms. For example, translating “estar más perdido que un pulpo en un garaje” (to be more lost than an octopus in a garage) requires finding an equivalent idiom in the target language, such as “to be like a fish out of water.” When no equivalent exists, the translator must decide whether to explain the meaning, adapt the expression, or replace it with a culturally relevant alternative.

In the field of cross-cultural communication, awareness of phraseology can prevent misunderstandings and foster deeper interpersonal connections. Idiomatic expressions often carry connotations of humor, irony, or emotion that are lost in literal interpretation. Being attuned to these nuances enhances both comprehension and expression in intercultural settings.

In conclusion, Spanish phraseology is a vital component of the language, reflecting the values, beliefs, and experiences of its speakers. It offers a unique lens through which to explore Spanish-speaking cultures and understand the interplay between language, thought, and society. Whether used in conversation, literature, or media, phraseological expressions add richness, depth, and authenticity to communication. As both a linguistic and cultural phenomenon, Spanish phraseology continues to evolve, adapt, and inspire learners and speakers around the world.

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Predicting User Behavior Based on Data Science Methods

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Abstract
This paper explores the problem of predicting user behavior using Data Science methodologies. A real-world dataset related to an e-commerce platform was selected for the study. The process included data preprocessing, feature extraction, and the evaluation of four machine learning models: Logistic Regression, Random Forest, XGBoost, and MLP Neural Network. Among these, the XGBoost model achieved the highest accuracy and F1-score. Key influential features identified include the number of product views, instances of items being added to the cart, and session duration. The study demonstrates the effectiveness of Data Science approaches in optimizing business decisions by predicting the likelihood of user purchases in advance.
Keywords: Data Science, user behavior, prediction model, XGBoost, e-commerce, machine learning.

1. INTRODUCTION

In today's digital world, analyzing and predicting user behavior has become strategically important for technology companies, online shopping platforms, social networks, and content services. Every action taken by a user—such as clicks, comments, time spent, or purchases—leaves behind digital traces that generate large volumes of data. If properly analyzed, these datasets offer the potential to forecast users' future behaviors. Data Science plays a central role in this process. By utilizing statistical analysis, machine learning algorithms, and visualization tools, it helps extract knowledge from raw data. In particular, the ability to anticipate user needs in advance enables businesses to accelerate decision-making, improve product quality, and enhance customer retention.

In this paper, we explore how Data Science approaches can be used to predict user behavior. Based on a selected dataset, we construct machine learning models, analyze them, and evaluate their performance.

Literature Review

The literature utilized in this study was selected from leading sources in the fields of Data Science, machine learning, and user behavior analysis. *Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow* by Géron (2019) served as a primary guide for building and analyzing practical machine learning models. It played a key role in understanding classification, model evaluation, and the problem of overfitting.

An Introduction to Statistical Learning by James et al. (2021) provided theoretical foundations for statistical approaches and supported the justification of models such as Logistic Regression, Decision Tree, and Random Forest. The paper by Chen and Guestrin (2016) on the XGBoost algorithm was a scientific basis for selecting and applying this model. The strong performance of the XGBoost model in this research was directly influenced by the technical solutions presented in that article. The methodologies for handling imbalanced data, particularly SMOTE (Synthetic Minority Oversampling Technique), as proposed by Brownlee (2016), were essential in balancing the models and reducing class imbalances. The open e-

commerce dataset available on Kaggle (2020) formed the practical foundation of the research. Since this dataset reflects real user activity, it allowed the models to be applied to near-real scenarios.

Additionally, the study by Zhang and Pennacchiotti (2013), which focuses on predicting purchase decisions based on behavior in social networks, provided contextual relevance and demonstrated the diversity of approaches in user behavior analysis.

Overall, the selected literature relied on modern Data Science methodologies and enabled successful integration of both scientific and practical experiences in the field.

2. METHODOLOGY

2.1. About the Dataset

This study used an open dataset reflecting user behavior on an e-commerce platform. The data were collected between September and December of 2019 and contain over 42 million records. Each record provides information about a user's session on the site, including entry and exit events, time spent on pages, products viewed, items added to cart, and completed purchases.

Key features:

user_id – User identifier
event_time – Timestamp of the event
event_type – One of: *view*, *cart*, *purchase*, *remove_from_cart* product_id – Product code
category_id – Product category
price – Product price
user_session – Session identifier

2.2. Data Preparation

a) Cleaning and filtering:

Records with remove_from_cart were excluded (since the focus is on predicting purchases)
Short sessions (with ≤ 3 actions) were removed
Invalid and null values (e.g., category_id = NaN) were eliminated

b) Feature engineering:

Number of times a user viewed a product (view_count)
Number of times an item was added to the cart (cart_count)
Type of the last action in the session
Session duration
Statistical aggregations of product price by category and other contextual features

c) Feature encoding:

Categorical columns like event_type and category_id were encoded using One-Hot Encoding

d) Target variable:

For each user session: purchase = 1 if a purchase occurred, otherwise purchase = 0

2. 3. Model Selection and Justification

The research models tested in the study were:

Model	Justification
Logistic Regression	Simple and interpretable, used as a baseline model
Random Forest	Performs well with imbalanced data
XGBoost	Effective in learning complex relationships
Neural Network (MLP)	Able to detect complex patterns with hidden layers

2.4. Model training and evaluation methods

Dataset was split into 80/20 for training and testing.
10-fold cross-validation was applied.
Due to class imbalance, SMOTE (Synthetic Minority Oversampling Technique) was used for oversampling
Evaluation criteria:
Precision
Recall
F1-score
ROC-AUC

2.5. Programming environment:

Python 3.10

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Libraries used:: Pandas, numpy – data processing, sklearn – modeling and evaluation, xgboost, imblearn– advanced modeling and balancing, matplotlib, seaborn– visualization and exploratory data analysis.

3. RESULTS

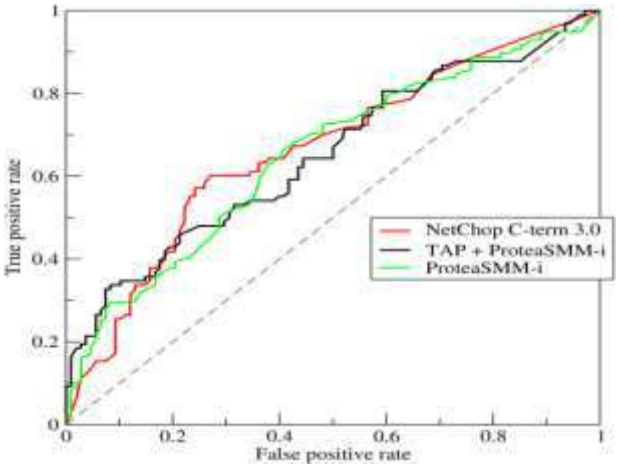
Four machine learning models—**Logistic Regression**, **Random Forest**, **XGBoost**, and **Multi-layer Perceptron (MLP Neural Network)**—were tested to predict user purchasing behavior. The objective was to determine whether a purchase would occur by the end of a user session.

Model	Accuracy	Precision	Recall	F1-score	ROC-AUC
Logistic Regression	0.87	0.35	0.62	0.45	0.78
Random Forest	0.91	0.44	0.70	0.54	0.84
XGBoost	**0.93**	**0.51**	**0.73**	**0.60**	**0.88**
MLP Neural Network	0.90	0.40	0.69	0.51	0.83

Note: The results were obtained using 10-fold cross-validation on a SMOTE-balanced dataset.

XGBoost achieved the highest scores across all key evaluation metrics.

3.2. ROC-AUC Curve



The **ROC Curve** for the XGBoost model indicates **88%** accuracy in distinguishing between positive and negative classes (purchase vs. non-purchase).

3.3. Confusion Matrix (XGBoost)

	Pred: No Purchase	Pred: Purchase
Actual: No	7810	1264
Actual: Yes	943	2123

Model xarid bo‘lmagan holatlarda noto‘g‘ri "purchase" deb bashorat bergan holatlar (false positive) mavjud bo‘lsa-da, xarid bo‘lgan sessiyalarni aniqlashda yuqori aniqlik ko‘rsatmoqda (True Positive = 2123).

3.4. Feature Importance (XGBoost)

The following features were identified as the most influential by the XGBoost model:

Feature	Importance (%)
view_count	29.4%
cart_count	23.1%
session_duration	18.6%
last_event_type	15.9%
category_popularity	13.0%

The frequency with which a user viewed and added products to their cart proved to be strong indicators of purchase intent.

3.5. Key Findings

XGBoost was the most effective model for predicting purchases. Features like view_count, cart_count, and session_duration played a decisive role in detecting purchase intent. The **SMOTE** technique significantly improved performance on imbalanced datasets. While the **Neural Network (MLP)** also performed well, it was outperformed by XGBoost across all metrics.

4. ANALYSIS

Among the four machine learning models used in this study, the **XGBoost algorithm** delivered the most effective results in predicting user behavior. Its advantage lies in its use of gradient boosting, which allows

it to detect complex and subtle behavioral patterns.

4.1. Analysis of Model Results

In terms of **Precision** and **Recall**, XGBoost outperformed the other models. This indicates that it is more reliable in correctly identifying users who are likely to make a purchase. **Random Forest** also performed reasonably well. It offers interpretability and robustness, although interpreting its internal structure can be complex. **Logistic Regression** is the simplest model and performs well in real-time applications due to its speed, but its accuracy was relatively low, likely due to its linear nature. The **Neural Network (MLP)** showed decent performance but did not match XGBoost, possibly due to its shallow architecture. A deeper network may have yielded better results.

4.2. Role of Important Features

The most important features were identified as **view_count**, **cart_count**, and **session_duration**. These variables reflect the user's level of interaction with the platform.

Specifically:

View count indicates user interest in the product.__**Cart count** strongly signals purchasing intent.__**Session duration** reflects engagement depth. Additionally, **last_event_type** (the last action in the session) was helpful in predicting purchases: sessions ending with a *cart* or *view* event were more likely to result in a purchase.

4.3. Application in Real Systems

This type of predictive model can be applied in real-time systems to:

Improve product recommendation systems on e-commerce platforms, Personalize marketing campaigns, Send reminders to users who abandoned their shopping cart, Support data-driven decision-making to increase conversions.

4.4. Limitations and Future Work

Limitations:

The data come from a single e-commerce platform and may not generalize to other domains. User-specific contextual information (e.g., age, location, time) was not included. Temporal relationships between sessions were not considered (e.g., using recurrent or time-series approaches).

Suggested future work:

Study dynamic user decisions using **reinforcement learning,** Apply **RNN** or **LSTM** models to better capture time-dependent behaviors, Perform **user segmentation** and build dedicated models for each segment

5. CONCLUSION

This study presented a detailed analysis of predicting user behavior using Data Science techniques. Four different machine learning models—**Logistic Regression**, **Random Forest**, **XGBoost**, and **MLP Neural Network**—were tested on a real-world e-commerce dataset. Based on the evaluation metrics, the **XGBoost** model achieved the highest levels of accuracy and precision/recall.

The results demonstrate that a user's interaction with the website—such as the number of product views, items added to the cart, session duration, and the last action type—can effectively predict purchase intent. In particular, predictive models capable of assessing the likelihood of purchase in real time can play a vital role in **optimizing business processes**, **personalizing advertisements**, and **enhancing user experience**. However, the study also had certain limitations. Time-dependent behavioral patterns and personal user attributes were not included in the analysis. For future work, it is recommended to explore time-series models such as **RNN** and **LSTM**, perform modeling based on **user segmentation**, and develop **interactive real-time**

systems to further improve prediction performance and business impact.

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The Current Status Of Professional Training Of Higher Educational Students In General Secondary Educational Institutions

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Abstract
This article presents opinions on the practical situation of vocational training of high school students in general secondary educational institutions, and the importance of subjects. Along with this, opportunities for vocational training are highlighted.
Keywords: knowledge, skill, competence, competence, opportunities, modern methods, interactive methods.
Annotatsiya
Ushbu maqolada umumiy o‘rta ta’lim muassasalarida yuqori sinf o‘quvchilarini kasbga tayyorlashning amaliyotdagi ahvoli, fanlarning ahamiyati yuzasidan fikrlar keltirilgan. Shu bilan birgalikda, kasbga tayyorlash imkoniyatlari yoritilgan.
Kalit so‘zlar: bilim, ko‘nikma, malaka, kompetensiya, imkoniyatlari, zamonaviy usullar, interfaol metodlar.

Mamlakatimizda umumiy o‘rta ta’lim muassasalarida yuqori sinf o‘quvchilarini kasb- hunarga tayyorlash va yoshlarning ijtimoiy, iqtisodiy muammolarini hal etish, band bo‘lmagan, ishsiz aholini mehnat bozorida talab yuqori bo‘lgan kasb-hunarlarga tayyorlashni tizimli yo‘lga qo‘yish hamda bandligini ta’minlash orqali kambag‘al qatlamga tegishli bo‘lgan aholini shu toifadan chiqarish ustuvor vazifalardan biridir.

O‘zbekiston Respublikasi Bandlik va mehnat munosabatlari vazirligi ma’lumotlariga ko‘ra, 2020 yilning yanvar-iyun oylarida mamlakatimizda ishsizlik darajasi 13,2 foizni tashkil etib, ish bilan ta’minlanishga muhtojlar soni 1,94 mln. nafarga ortgan. Shundan yoshlar orasida ishsizlik darajasi 20,1 foizni tashkil etadi. Shubhasiz, ishsizlik darajasini ayollarga nisbatan qaraydigan bo‘lsak, bu ko‘rsatkich yuqori bo‘lishi tabiiy, albatta.

Ma’lumki, davlatimiz tomonidan ijtimoiy ko‘makka muhtoj aholi, boquvchisini yo‘qotgan yolg‘iz ayollar, muayyan kasb-hunarga ega bo‘lmagan yoshlar, pandemiya tufayli nochor iqtisodiy vaziyatga tushib qolgan oila va shaxslarga ko‘rsatilayotgan ijtimoiy yordam, ajratilgan mablag‘lar, imtiyozli kreditlar bir muddat ijtimoiy-iqtisodiy ahvolini ta’minlab turgan bo‘lsada, biroq ularning o‘z ijtimoiy holatini o‘zgartirishga rag‘bat tarzidagi mexanizm sifatida o‘zini oqlamayotganligi kuzatilmoqda. Aksariyat hollarda bu ko‘rsatiladigan ijtimoiy yordam manzilli emas, balki korrupsion sxemalar orqali amalga oshirilayotgani, ajratilgan mablag‘lar va imtiyozli kreditlarni olgan aholi, ayniqsa ayollar bu mablag‘lardan norasional foydalanayotgani, ya’ni shaxsiy ehtiyojlari uchun sarflab, davlat tomonidan berilayotgan ko‘makdan uzluksiz umidvor bo‘lish, shuningdek ularda “davlat menga yordam berishi shart”, qabilidagi kayfiyat paydo bo‘layotgani ko‘zga tashlanmoqda. Natijada davlat tomonidan aholining aynan shu toifasini kambag‘allik va u bilan bog‘liq kayfiyatdan xalos qilishga yo‘naltirilgan yangi mexanizmga ehtiyoj tug‘ilmoqda.

Yevropaning ko‘plab rivojlangan davlatlarida ijtimoiy shartnoma mexanizmini oqilona yo‘lga qo‘yish orqali ko‘pgina oilalar, alohida shaxslarni inqirozdan olib chiqish

bo‘yicha ijobiy tajribalar orttirilgan. Shu bois, bugungi kunda ijtimoiy shartnoma qiyin iqtisodiy vaziyatga tushib qolgan aholining ushbu vaziyatdan chiqib ketishiga ko‘maklashadigan va rag‘batlantiradigan mexanizm hisoblanadi. Mazkur mexanizm - davlat va fuqaro, davlat va oilalar o‘rtasida o‘zaro harakatlarning yakka tartibidagi yo‘nalishini belgilash maqsadida ishlab chiqiladigan rejaga asoslangan bitimdir.

Ma’lumki, kambag‘allik yurtimizda ko‘p yillar “yopiq mavzu” bo‘lib kelgan. 2020 yil 24 yanvar kuni Oliy Majlisga qilgan Murojaatnomasida O‘zbekiston Respublikasi Prezidenti Sh.Mirziyoyev aholining 4-5 milllioni kambag‘al ekani haqida ochiq-oydin gapirib, mamlakat tarixida ilk marotaba kambag‘allikni qisqartirishni ustuvor vazifa sifatida belgilab berdi. Ya’ni, “Kambag‘allikni kamaytirish oylik yoki nafaqa miqdorini ko‘paytirish, yoppasiga kredit berish, degani emas. Buning uchun, eng avvalo, aholini kasbga o‘qitish, moliyaviy savodxonligini oshirish, odamlarda tadbirkorlik hissini uyg‘otish, infratuzilmani yaxshilash, farzandlarini o‘qitish, sifatli davolanish, manzilli nafaqa to‘lash tizimini joriy qilish kerak” , – deb ta’kidlandi.

Shu bois, mamlakatimizda qashshoqlikni tugatish, kambag‘allikka qarshi kurashish, aholini ijtimoiy qo‘llab-quvvatlash maqsadida hukumat tomonidan ijtimoiy shartnomaga ko‘proq e’tibor qaratish zaruriyati davlatimiz rahbari Sh.Mirziyoyev tomonidan 2020 yilning 8 oktyabr kuni jamiyatda ayollar va yoshlarning rolini oshirish hamda bandligini ta’minlash chora-tadbirlari muhokamasi yuzasidan o‘tkazilgan videoselektor yig‘ilishida ham tilga olindi. Shuningdek, aholini ijtimoiy qo‘llab-quvvatlash maqsadida moddiy yordam va ko‘makka muhtoj oilalar ro‘yxati aks etgan “Temir daftar” kabi alohida har bir mahalla, tuman, shahar va vviloyat kesimida “Yoshlar daftari” va “Ayollar daftari” shakllantirilishi va unda “ijtimoiy shartnoma” tajribasini keng qo‘llash maqsadga muvofiqligi ham belgilab berildi.

O‘zbekiston Respublikasi Prezidentining 2020 yil 8 iyundagi “Tadbirkorlik faoliyati va o‘zini o‘zi band qilishni davlat tomonidan tartibga solishni soddalashtirish chora-tadbirlari to‘g‘risida” PQ-4742-son qarori, 2020 yil 26 martdagi “Iqtisodiyotni rivojlantirish va kambag‘allikni qisqartirishga oid davlat siyosatini tubdan yangilash chora-tadbirlari to‘g‘risida” PF-5975-son Farmoni hamda “Aholini tadbirkorlikka jalb qilish tizimini takomillashtirish va tadbirkorlikni rivojlantirishga doir qo‘shimcha chora-tadbirlar to‘g‘risida” 2020 yil 13 oktyabrdagi PQ-4862-son qarori aholini tadbirkorlik faoliyatiga yanada keng jalb qilish, o‘z-o‘zini band qilishning qo‘shimcha shart-sharoitlarni yaratish hamda o‘z-o‘zini band qilishni rag‘batlantirish bo‘yicha vazifalarning belgilanganligi mazkur loyiha mavzusining dolzarbligini bildiradi.

Iqtisodiy o‘sish va rivojlanishning yuqori sur’atlariga erishish masalasi doimo iqtisodchilarning muhokama e’tiborida bo‘lgan va shunday bo‘lib qoladi. Cheklangan resurslar va cheksiz ehtiyojlar o‘rtasidagi qarama-qarshilikni bartaraf etish va aholi turmush darajasini oshirish imkonini beruvchi iqtisodiy o‘sish modelini izlash iqtisodiy nazariyaning eng muhim vazifasidir.

Zamonaviy olimlarning fikricha, daromadlarni taqsimlash tabiati bilan iqtisodiy o‘sish o‘rtasida yaqin bog‘liqlik mavjud. Bu, birinchi navbatda, aholi o‘rtasida daromadlarning kamayishi bilan mehnat resurslari sifatining keskin yomonlashuvi bilan bog‘liq, ikkinchidan, aholining kam maosh oluvchi toifalari daromadlari darajasining oshishi mahalliy ishlab chiqarishning rivojlanishini, investisiya faolligini va bandlikning o‘sishini rag‘batlantiradi, uchinchidan, daromadlarni taqsimlashga bir tekis yondashish

psixologik jihatdan muhim ijobiy omil hisoblanadi .

Aksariyat iqtisodchilarning fikricha, davlatning ijtimoiy-iqtisodiy siyosati fuqarolarning ijtimoiy ahamiyatga ega ehtiyojlarini qondirish uchun shart-sharoitlar yaratish, aholi turmush darajasining ijobiy dinamikasini ta'minlash maqsadida amalga oshirilishi, pirovardida bu mamlakatning o'zi rivojlanishi uchun aniq shartga aylanadi[1].

Ma'lumki, yosh avlod tarbiyasi hamma zamonlarda ham muhim va dolzarb ahamiyatga ega bo'lib kelgan. Ammo biz yashayotgan XXI asrda bu masala haqiqatdan ham hayot-mamot masalasiga aylanib bormoqda.

"Tarbiya qancha mukammal bo'lsa, xalq shuncha baxtli yashaydi"-, deydi donishmandlar. Tarbiya mukammal bo'lishi uchun esa bu masalada bo'shliq paydo bo'lishiga mutlaqo yo'l qo'yib bo'lmaydi.

Hududlarda yashaydigan yoshlar zerikkanidan nima qilishni bilmasdan bemaza ishlarga berilishi, bezorilik, jinoyat yo'liga kirishi, zararli oqimlarga ko'shilib ketishi mumkinligi hammani bezovta qiladi, albatta.

Yoshlarni kasb-hunarga o'rgatish bilan bir qatorda, ish bilan taьminlash uchun avvalo ular o'rtasida tadbirkorlikni keng rivojlantirish bu borada yangi imkoniyatlar yaratish maksadga muvofiqdir.

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Requirements For The Teaching Profession In The Period Of Innovative Education Development

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Abstract
Digitalization, interactive technologies, creative approaches and the use of modern pedagogical methods in education are increasing the need for the professional potential of teachers. In this regard, this article analyzes the modern requirements for the teaching profession in the context of the development of an innovative education system. The article also highlights aspects such as the formation of a teacher's personal and professional competencies, continuous learning and flexibility as important factors. Recommendations are given to increase the effectiveness of pedagogical activity based on innovative approaches.
Keywords: innovative education, teaching profession, modern requirements, digital pedagogy, competence, pedagogical innovation, continuous education, flexibility, professional development, interactive methods.

In the modern era, the education system has entered a stage of dramatic changes and updates. Globalization, the rapid development of information technologies, and digital transformation processes require a radical renewal of the content and essence of the teaching profession. The role of the teacher is a decisive factor in improving the quality and efficiency of education based on innovative approaches. Therefore, today the teacher is considered not only as a provider of knowledge, but also as an educator, motivator, creator, and a person capable of learning.

Innovative education is a system based on new approaches that develops the thinking ability, creative potential, and practical skills of the learner. In such a system, the following aspects are prioritized:

- active use of digital tools;
- interactive and integrated educational process;
- person-oriented approach;
- Expansion of continuous and distance learning forms.

As a result of such approaches, the quality and efficiency of the educational process will increase.

Students will acquire life skills such as independent thinking, problem solving, and teamwork. In particular, a person-oriented approach creates an opportunity to reveal and develop the individual abilities of each student.

In innovative education, the teacher is not only a provider of knowledge, as before, but also a trainer, guide, motivator, and innovator. He encourages students to be active, stimulates their interests, and effectively organizes the teaching process using modern methods. This takes the quality of education to a new level.

Also, innovative approaches require the teacher to constantly study innovations, analyze his own pedagogical activities, and effectively use modern technologies. Thus, innovative education is a system based on interaction between teacher and student, aimed at continuous development and growth.

In such conditions, the role, function and professional competencies of the teacher are being reconsidered. In the era of innovative education, the following basic qualities are required of the teacher:

•Digital literacy: The teacher must be proficient in modern technologies and be able to work with online platforms.

•Creativity: The ability to organize each lesson in a new format, based on the interests and needs of the student.

•Analysis and critical thinking: In order to teach students to think independently and solve problems, the teacher himself must be able to take an analytical approach.
•Adaptability: Ability to adapt to frequent changes in educational conditions, readiness to master new methods.
•Continuous self-development: Professional development, familiarization with new pedagogical technologies.
Today's teacher must embody the following competencies:
•Pedagogical competence - effective organization of the educational process, educational work.
•Information and communication competence - use of modern technologies.
•Social and communicative competence - work with a team, effective communication with students and
parents.
•Methodological competence - in-depth knowledge of subjects, ability to
use modern methods.
The formation of an innovative teacher is carried out through the following means:
•continuous professional development courses and seminars;
•self-development - reading books, participating in online courses;
•exchange of experience - open classes, teacher-student traditions;
•implementation of innovations in practice based on the integration of science and technology.
The competitiveness of the education system in modern society largely depends on the personality of the teacher, his professional qualifications and openness to innovation. In the era of innovative education, the competencies required of a teacher are not only the ability to convey traditional knowledge is not limited. On the contrary, a teacher must be a person who is well-rounded, masters technology, is creative, and constantly works on himself.

In an innovative educational environment, a teacher appears as a strong person who ensures the active participation of students in the learning process, and can form competencies such as independent thinking, critical thinking, and problem solving in them.
Within the framework of such an educational model, a teacher analyzes his professional activities, quickly adapts to innovations, and can implement an individual approach to each student.
Also, the concept of continuous education makes it necessary for a teacher to constantly improve his knowledge and skills. Therefore, a modern teacher is required to master not only digital literacy, but also pedagogical psychology, communicative culture, and modern didactic approaches.
In conclusion, the place and role of the teacher in the development of innovative education is extremely important. The improvement of the quality of education, the personal and professional development of students directly depend on the maturity of the teacher to meet modern requirements. Therefore, the training of teachers who are innovative thinkers, who can effectively use technologies, who work on themselves and constantly improve their pedagogical skills remains an urgent task.
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AI in Rural Healthcare Development

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Abstract
Digitalization, interactive technologies, creative approaches and the use of modern pedagogical methods in education are increasing the need for the professional potential of teachers. In this regard, this article analyzes the modern requirements for the teaching profession in the context of the development of an innovative education system. The article also highlights aspects such as the formation of a teacher's personal and professional competencies, continuous learning and flexibility as important factors. Recommendations are given to increase the effectiveness of pedagogical activity based on innovative approaches.
Keywords: innovative education, teaching profession, modern requirements, digital pedagogy, competence, pedagogical innovation, continuous education, flexibility, professional development, interactive methods.

Artificial Intelligence (AI) may enhance access to primary health care in rural settings, especially in areas with an underserved and rural populace, due to systemic challenges in infrastructure inadequacies, shortages of trained professionals, and poor preventive measures. This paper discusses the transformative roles of AI technologies in the efforts toward bridging these gaps by improving healthcare delivery and access. With the rise of machine learning (ML) and natural language processing (NLP), AI applications may enhance diagnostic accuracy, speed up and facilitate patient interfaces, and perform resource management more optimally. This list of benefits seems promising, but the realization of AI in healthcare faces quite a few challenges: it requires ethical considerations, assurance of data safety, and sound legal frameworks. While AI, Internet of Things (IoT), and mobile health (mHealth) technologies create innovative solutions in remote monitoring and consultation, these technologies help promote prevention. Realizing the full potential of AI in rural health is thus a challenge in both infrastructural and socio-economic spheres, requiring active collaboration. This present study indicates that it is high time there was an urgent need for high-quality research with real-world evaluation regarding the effectiveness of AI in bringing improvement in health outcomes among people in rural settings.
Keywords: Healthcare, rural medicine, artificial intelligence, technology, health, health equity, predictive analytics, telemedicine, remote patient monitoring, health workforce shortage, technology-assisted diagnostics, cost-effective healthcare solutions.

The integration of healthcare data collection with AI-centered systems has the potential to revolutionize healthcare access and delivery for all. Data analytics and AI healthcare solutions can identify patterns, predict patient outcomes and optimize resource allocation in previously impossible ways. This connection offers an opportunity to address disparities in healthcare access more effectively.
However, effective implementation requires robust data governance policies to ensure privacy, security and equitable use, which are critical concerns for decision-makers. Healthcare professionals leveraging AI solutions must prioritize the ethical and

secure handling of patient data to ensure trust and compliance with regulations. Clear guidelines, regular audits and patient consent protocols are essential to create a system where innovation aligns with ethical standards to transform healthcare access and outcomes for rural communities. When discussing AI, it's easy to get caught up in future capabilities. AI in healthcare is frequently presented as a solution that will revolutionize diagnosis and create personalized patient care. While true, realizing these solutions will take time to develop.

AI technologies will dramatically improve the efficiency and quality of healthcare services in rural and under-reserved areas. Training health workers to use AI systems will mitigate the shortage of qualified healthcare providers. The access and quality of rural health services will be also improved. AI tools are used for the early detection, diagnosis, and management of diseases. The neural networks, which include the convolutional and abductive networks, have demonstrated high accuracies in application areas of use. Studies have indicated an urgent need for high-quality, real-world research in developing its value in healthcare and public health.

Globally, more than 3.4 billion people live in rural areas, comprising roughly 43 % of the world's population lives in rural settings. Most of the rural population inhabits Asia and Africa; India and China possess the largest rural populations. Rural healthcare access remains a significant concern due to barriers such as geographic dispersion, economic constraints, and infrastructural limitations. These populations are usually characterized by lower incomes, inadequate healthcare access, and relatively high unemployment rates compared to urban communities. Consequently, this population is most susceptible to health disparities, which generally include higher chronic disease burdens and less access to healthcare professionals. AI technologies can bridge this gap by bringing much-needed efficiency and effectiveness in healthcare delivery to these underserved areas. It not only improves the quality of care but also saves health professional's time in carrying out diagnoses, enabling them to be more patient-interactive and have sufficient time for treatment planning.

Rural areas usually have significant barriers to accessing healthcare services compared to urban areas. One of the main challenges includes a shortage or lack of health infrastructures like hospitals and diagnostic facilities. One more major reason behind insufficient healthcare in rural settings is a noted shortage of health professionals. Many rural populations have been shown to face shortages of primary and specialist healthcare providers, leading to poorer health and increased mortality rates compared to urban communities. Economic hardships further hinder access, as underfunded healthcare infrastructure makes services both unavailable and unaffordable. In addition, rural residents usually have lower levels of health knowledge and awareness. Also, health education and promotion programs are often lacking in rural settings.

Travel distance is another major barrier, often resulting in delays that worsen health conditions, while unreliable transportation exacerbates the issue; for example, studies highlight transport as a key obstacle to accessing maternal and child health services. Inadequate transport infrastructure also forces difficult prioritization of health needs in rural settings. This situation is reiterated across different contexts where rural populations have to grapple with inadequate transport infrastructure, making priorities hard to make in terms of health needs. Addressing these challenges demands a

comprehensive effort to improve healthcare funding, infrastructure, and workforce availability.

AI can potentially help extend access to health care in rural areas, at least by mitigating gaps in health resources and the workforce. The most important advantages of AI in rural healthcare are related to improving access to disease screening and early detection. Several studies have identified that AI-based screening for diseases like diabetic retinopathy and skin cancer is cost-effective and can increase its reach in remote areas. AI in use within a healthcare context is altering the mode of medical service delivery, and AI systems in healthcare are primarily designed to optimize processes, reduce dosage errors, manage medication, and make preliminary diagnoses. As AI has promised to revolutionize health due to its efficiency, cost-effectiveness, and preciseness, there is a developing concern that this new trend could potentially compromise the empathetic, personalized care that conventionally characterizes the relationship between patient and provider. Alarmingly, almost 50 % of the world receives consultations from physicians that are 5 minutes or less, which will begin to raise questions about the quality of care and whether such consultations can address the patient's health concerns. In this context, leveraging AI chatbots can streamline patient interactions. Recent advances in large language models (LLMs), such as ChatGPT, have shown some success in improving the quality of responses by virtual assistants in health-related scenarios. As a result of this fact, allows the chatbot then to be increasingly adept at responding to more complicated health-related inquiries that might emanate from patients themselves, therefore developing an improvement in outcomes and satisfaction. It can also provide timely health information, symptom understanding for patients, suggesting possible medications, reminders to take medicines, and management of chronic diseases, all of which will go a long way in improving patient compliance with treatment.

Besides, AI-driven applications in rural healthcare may also promote efficiency in service delivery for the providers. Active AI technologies can assist in automating routine tasks such as appointment settings and follow-up with patients, freeing the professionals to attend to the more complicated needs of patients. This is not all; AI can also provide insight into better resource planning and patient management beyond improvement in prescription accuracy. Machine learning (ML) algorithms of AI technologies can present the best practices in prescribing drugs to health professionals by analyzing huge data sets and minimizing the risks of committing prescription errors. ML and natural language processing (NLP) have been applied for diagnosis, detection, and surveillance as AI-powered technologies, and they show a high degree of accuracy on clinical tasks. Mobile health (mHealth) and Internet of Things (IoT) technologies have made remote health monitoring a reality by keeping patients in homes rather than expensive healthcare facilities like hospitals or nursing homes using noninvasive and unobtrusive wearable sensors that provide continuous real-time monitoring of physiological signs and activities of the patients that can be accessed from distant facilities by the health personnel. mHealth technologies, such as text messaging, have the potential to address challenges faced in rural settings in managing chronic diseases like tuberculosis, HIV, hypertension, cardiovascular disease, colorectal cancer, and pneumonia. These technologies could improve health outcomes and quality of life through cost-effective healthcare solutions.

AI-powered clinical decision support systems (CDSS) can further help rural

healthcare practitioners, who often lack access to specialist's advice. This will result in real-time advice on diagnosis, treatment options, or patient management and, when appropriate, suggestions for changes in care that will help improve outcomes. Deep learning algorithms have shown considerable promise in the area of medical image processing for analyzing a variety of imaging modalities, including MRI, CT scans, and X-rays. With these technologies, healthcare workers can be supported by preliminary assessment support, therefore relieving the workload and focusing their attention on patients. Integration with AI and telemedicine methods has the potential to serve even the most remote sites, thereby minimizing the transportation of subjects over long distances in search of services. This AI will also widen the accessibility to patient data interpretation when applied to electronic medical records (EMR) using natural language processing (NLP) thus informed decisions could be derived. This approach has emphasized the utilization of diverse data sources toward enhancing predictive accuracy, a theme similarly developed in other studies focused on diabetes.

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Роль Финансового Менеджмента На Пути Усиления Инвестиций Рельного Сектора Экономики

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Аннотация
В статье изучены идеи по организации финансового менеджмента в аграрном секторе и внедрения его методологии в практику в условиях модернизации экономики в Республике Узбекистан. Рассмотрены основные проблемы финансового менеджмента в реального секторе.
Ключевые слова: реформы, модернизации, финансовый менеджмент, инвестиционные решения, финансирование, дивидендная политика.

С первых дней Независимости в Республике Узбекистан последовательно осуществляется глубоко продуманная стратегия развития *реального и аграрного сектора*, направленная на обеспечение продовольственной безопасности страны.

Этот подход к производству плодоовощной продукции как важной составной части всей системы жизнеобеспечения населения, поддержания его здоровья, а также создания условий занятости стал одним из основных векторов экономической и социальной политики нашего государства.

Благодаря предпринимаемым системным мерам неуклонно повышается экспортный потенциал отрасли. В последние годы Узбекистан превратился в крупного экспортера высококачественной и конкурентоспособной плодоовощной продукции. Для ее обеспечения в течение всего года большое внимание уделяется вопросам переработки и хранения.

Осуществляемые реформы Узбекистана получают достойную оценку международного сообщества. В частности, одно из авторитетных в мире изданий – журнал «Экономист» признал Узбекистан страной года, государством, где реформы в 2019 году осуществлялись наиболее быстрыми темпами.

В сельском хозяйстве реализуются меры по повышению заинтересованности фермеров и дехкан, внедрению передовых технологий и переходу на кластерную систему производства.

В 2024 году объем валовой продукции сельского хозяйства в республике достиг 444,6 трлн сумов, увеличившись на 18,5% за пять лет. Среднегодовой темп роста валовой продукции за последние пять лет составил 103,5%.

Сельскохозяйственный сектор Узбекистана демонстрирует лидирующие позиции в регионе: объем валовой продукции превышает показатели Казахстана, Таджикистана и Кыргызстана, что отражает его масштаб и стратегическую значимость.

Согласно данным Всемирного банка, добавленная стоимость на одного занятого в сельском хозяйстве Узбекистана в 4,4 раза превышает среднемировой уровень, что указывает

на эффективность аграрного сектора и его растущую производительность.

В последные годы усиливается финансирование буквально в области плодоовощепроизводства, семеноводства, животноводства, агрологистики, широкое внедрение водо и ресурсосберегающих технологий, научно-исследовательскую работу и подготовку квалифицированных кадров для аграрной сферы [1]

В условиях повышения конкурентоспособности в аграрном секторе на основе совершенствования финансового менеджмента на предприятиях сельского хозяйства внедрение экономического роста и постоянного, стабильного повышения стратегических направлений и его конкурентной способности считается актуальной задачей настоящего времени.

Развитие рыночных отношений в стране не только усилило роль финансов в функционировании предприятия, но и определило направленность коренных преобразований в сфере управления финансами. Переход к рыночной экономике способствовал рождению новой специальности в сфере управления - финансового менеджера. Финансовый менеджер должен быть высокообразованным, творчески мыслящим специалистом.

Становление профессиональных менеджеров в Республике Узбекистан будут определять возникающие новые экономические решения, развитие рыночной сферы, развитие форм собственности и бизнеса, новый уровень банков, рынков ценных бумаг и целенаправленная подготовка специалистов.

Изучение финансового менеджмента состоит из механизма управления денежными фондами, денежными отношениями, т.е. то, что составляет понятие финансы.

Что касается определения финансового менеджмента, то оно связано с понятием механизма управления финансами или финансового механизма. А финансовый механизм представляет собой систему действий финансовых рычагов, выражающуюся в организации, планировании, стимулировании использования финансовых ресурсов.

Финансовые отношения между многочисленными участками хозяйствования показываются именно при движении финансовых ресурсов, которые в свою очередь и выступают объектом управления. Выработка цели управления, предвидение положительного действия финансового механизма, принятие финансовых решений относятся к сфере непосредственной обязанности финансового менеджера.

Финансовый менеджмент направлен на увеличение финансовых ресурсов, инвестиций и наращивание объема капитала.

Финансовый менеджмент - неотъемлемая часть общей системы управления предприятием, в свою очередь, состоящая из подсистем: объекта управления (управляемая подсистема) и субъекта управления (управляющая подсистема).

Объектом управления в финансовом менеджменте является совокупность условий осуществления денежного оборота, кругооборота стоимости, движения финансовых ресурсов и финансовых отношений между хозяйствующими субъектами.

Субъект управления - это конкретные профессионалы, специальная группа людей, которые посредством различных форм управленческого воздействия осуществляют целенаправленное функционирование объекта.

Воздействие субъектов экономических отношений на объект управления при выработке определенной стратегии и тактики раскрывает содержание финансового менеджмента.[2.с.24.]

Цели финансового менеджмента реализуются через функции объекта и субъекта управления. Можно сформулировать целую систему целей финансового менеджмента, а именно:

- уход от банкротства и крупных финансовых неудач;
- выживание фирмы в условиях конкурентной борьбы;
- минимизация расходов;
- обеспечение рентабельной деятельности;
- максимизация прибыли и т.д.

Согласно этой функции, финансовый менеджмент охватывает две сферы деятельности фирмы: приобретение средств, а также их распределение. Независимо от результатов включает и получение внешних средств. Главная задача финансового менеджера - эффективное и рациональное размещение имеющихся средств. При этом необходимо учесть:

1) как обширно предприятие и как быстро оно будет расти;
2) в какой форме будет оно владеть активами;
3) какой будет состав его обязательств.

Эти три вопроса являются важными финансовыми проблемами предприятия. Другими словами, финансовый менеджмент касается трех важных проблем, связанных с деятельностью предприятия, т.е. инвестиции, финансирование и дивидендные решения - это три основные функции финансового менеджмента.

I. Инвестиционные решения имеют отношения к выбору активов, в которые средства предприятия будут инвестированы. Активы, которые могут быть приобретены, выражаются в двух группах.

1. Долгосрочные активы, которые будут приносить доход через определенный период времени в будущем.
2. Краткосрочные или текущие активы, которые в нормальном ходе бизнеса (деятельности) обращаются в наличные средства обычно в пределах одного года.

II. Финансовые решения, касающиеся текущих активов или краткосрочных активов, определяются как управление оборотным капиталом.

Первый аспект - капитальный бюджет относится к выбору нового актива из имеющихся в распоряжении альтернативных или заново размещенных капиталов, когда существующий актив оказывается не в состоянии оправдывать вложенные средства.

III. Третье важное решение в финансовом менеджменте - решение связанное с дивидендной политикой. То есть политика предприятия в области использования прибыли, по которой определяется, какая доля прибыли выплачивается акционерам в виде дивидендов, а какая доля остается в виде нераспределенной прибыли и реинвестирования.

Какой курс следует избрать - дивиденды или реинвестирование? Решение будет зависеть от предпочтения акционеров и от инвестиционной политики фирмы и других факторов.[3.с.39.]

Финансовый менеджмент является неотделимой частью общего менеджмента и тесно взаимосвязан с такими как экономика, бухгалтерский учет, а также с различными областями производства и маркетинга.

В частности, предприятия и фирмы аграрном секторе работают в тесном макроэкономическом окружении и поэтому финансовый менеджер должен

знать и хорошо ориентироваться как в вопросах макроэкономики, так и микроэкономики. Особенно:

1) должен предполагать, как денежно-кредитная политика государства воздействует на цены и наличные средства предприятия;

2) быть опытным в фискальной политике и знать, каким образом она воздействует на экономику;

3) знать различные финансовые институты и их образ действия, оценивать потенциальные инвестиции;

4) должен предполагать последствия различных способов и уровней активизации финансовой деятельности, а также влияние изменений в экономической политике на свои финансовые решения;

5) знать взаимоотношения спроса и предложения и стратегию максимизации прибыли;

6) рассчитывать результаты, связанные с изменением различных производственных факторов, "оптимальный" уровень реализации продукции и результат ценовой стратегии; предпочтительные размеры выгодности, риск и определение стоимости и т.д.

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Psychological Significance Of The Concept Of Loneliness

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Abstract
The study attempts to reveal the general and socio-psychological content of the concept of Loneliness. The study is based on the theories of some researchers. The article also highlights the philosophical and psychological aspects of the concept of Loneliness and draws a general conclusion. Not only the concept of Loneliness, but also some social concepts corresponding to it are taken into account, and their etymology is briefly discussed. The study effectively used theoretical and etymological methods. As a result, the psychological aspects of the concept of Loneliness are revealed.
From a psychological point of view, Loneliness is a condition that occurs at a certain stage of every person's life. Understanding and properly managing this condition is an important factor in ensuring psychological health. Based on personal experiences and scientific approaches, it can be said that although voluntary loneliness is sometimes a means of spiritual recovery, the chronic nature of social loneliness can lead to dangerous consequences. Therefore, each person needs to learn to analyze their own situation, identify their needs, and ask for help when necessary. The study draws general conclusions based on these theories.
Keywords: Loneliness, solitude, individuality, psychology, isolation, theory, psyche, essence, content.

INTRODUCTION

We still have a wrong and one-sided idea about the concept of solitude. Religion and mysticism have never advocated living a life in complete solitude. Solitude is not an escape from life, separation from life, or the need to be away from people, but rather a return to activity with spiritual maturity after a certain period of “professional perfection and beauty of life.” [1.227]
To explain the concept of solitude in more depth, it is impossible not to turn to Solitude and Solitude. If we pay attention to the lexical meaning of the word Solitude, it comes in a number of meanings, such as an empty, empty place, a deserted place, solitude, not being attached to anything, and freedom from the various worries of the world. The mystical meaning of solitude is as follows: to overcome the spiritual obstacles created by worldly ties and to steady the soul on the path of divine enlightenment, to engage in worship and meditation under the guidance of a pir. Solitude is directly related in meaning and content to the following concepts: uzlat, tafrid, tajrid, inzivo, i'tikaf, abandoning mixing with the people, leaving the world, tawhid, and Wahdat.

LITERATURE ANALYSIS AND METHODOLOGY

This article studies the psychological foundations of loneliness based on theoretical and analytical methods. Also, based on practical observations and experiences of people of different ages, the impact of social isolation on mental health was assessed.
Also, the explanatory dictionary of the Uzbek language, dictionaries of psychological concepts, and the dictionary of researcher Odiljon Avaznazarov entitled “Navoiy timsollari so’zligi” were used effectively. At the same time, in terms of the psychological approach, scientific research and dissertations of a number of scientists such as Klementyeva, Sadler, Jones, Tikhonov, Mateyev were used.

RESULTS

First of all, let's pay attention to the meaning and content of the concept of Loneliness in general psychology. The explanatory dictionary of the Uzbek language gives a brief definition: "loneliness - not having a single partner, alone, alone, secluded". [2.632] In the psychological dictionary, we can find a broader description: "Loneliness is one of the psychogenic factors, an emotional state that manifests itself in unusual conditions only in a person's isolation from others." These definitions allow us to consider the phenomenon of loneliness from the perspective of social psychology, to understand the causes and essence of the various occurrences of human emotional states, and to distinguish the tradition of analyzing the phenomenon of loneliness in positive and negative aspects. In addition, the definition recognizes that the words “solitude” and “isolation” should be used along with the word “solitude”.

The word “isolation” comes from the French verb “isolation”, “isoler”, which means to isolate, from the Italian “isolato” meaning “separate, alone”, isola meaning “island”, from the Latin insula meaning “island”. It is clear from this that isolation is exactly the same in terms of content and origin as the words “solitude” and “isolation”. [3.66-68]

Trubnikova believes that the concepts of solitude, solitude and isolation are not synonymous. He explains: “Isolation is a physical, spatial, and enduring position of a person in relation to social existence” [4], an externally manifested phenomenon, not an internal psychological experience. As W. Sadler and T. Jones emphasize: to determine physical isolation, it is enough to see with the eyes, but to understand loneliness, it is necessary to feel it.”

The concept of loneliness is not used in the same sense as the concept of isolation, as some people think. Isolation is a process that leads to withdrawal from the external environment in social life, as a result of which there is a series of negative emotional colors such as stress, depression, dissatisfaction, suffering, self-equalization. For this reason, it is not permissible to study loneliness along with these terms that express a series of negative meanings. Loneliness also resembles isolation in a certain sense and leads to isolation in the social environment. In the structure of loneliness, such negative goals do not dominate, on the contrary, if we consider it as a process of avoiding certain negative vices in order to educate oneself while living alongside the external environment in social life, that is, by being left alone, Loneliness does not pursue such negative goals.

A number of scientists such as Trubnikova, Klimentyeva, Tikhonov, Sadler, Jones, who aimed to study the etymology of the origin and different aspects of such concepts as Loneliness, Solitude, Solitude, tried to reveal the place of each of them separately. One of the modern researchers, G. M. Tikhonov, analyzed the pair of concepts “loneliness-solitude” in a phenomenological way, in a polar context. The term “loneliness” denotes a state of being humiliated, abandoned, separated from each other, communicative weakness, that is, it is a sign of subjective experiences in conditions of exclusion from society. The term loneliness is defined as a subjective feeling of physical distancing from others, as defined by the scientist. [5.354-360]

DISCUSSION

D. A. Mateev calls the two pairs of concepts “isolation-loneliness” and “loneliness-loneliness” a contradiction and an opposition between two states that are considered correct [3]. According to the scientist, isolation is a forced separation of the subject from the surrounding environment, physical distancing from others. If isolation is an obligation that

manifests itself externally, then loneliness is an internal subjective experience. Loneliness is a temporary interruption of communication and determines the success of the individual as part of society in achieving certain goals. Loneliness is a permanent breakdown of communication, a painful disconnection of a person from the environment, an awareness of his own dissimilarity to his world. Many researchers include in the concept of loneliness descriptions that also apply to the concept of loneliness. The positions of voluntary or forced loneliness have a purely social orientation and are antinomic in structure. Voluntary loneliness represents the term loneliness with a positive orientation. Goleman [7] calls the typology of the structure of the concept of loneliness 1) forced physical or social isolation of a socially significant category of people; 2) a conscious limitation of external contacts for the purpose of spiritual improvement; 3) a feeling of unsatisfied and misunderstood need for communication, a painful experience of mental and spiritual isolation.

CONCLUSION

Loneliness is an important psychological condition that is widespread in modern society and directly affects human mental health. Identifying its causes, developing its positive aspects and preventing its negative consequences is an urgent task of today's psychology. Taking into account the individual needs of each person, a systematic and psychological approach to combating loneliness is important.

From a psychological point of view, Loneliness is a condition that occurs at a certain stage of every person's life. Understanding and managing this condition is an important factor in ensuring psychological health. Based on personal experiences and scientific approaches, it can be said that while voluntary solitude is sometimes a means of spiritual recovery, chronic social loneliness can lead to dangerous consequences. Therefore, each person must learn to analyze their situation, identify their needs, and ask for help when necessary.

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Macrochronotope. Artistic Interpretation Of The Chronotope Of An Epic Composition In The Narrative Genre

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Abstract
Scientific and theoretical views on macrochronotope, artistic and developmental interpretation of composition and chronotope in works of the epic genre are analyzed in this article. The concepts of chronotope of epic composition, macrochronotope. The role of macrochronotope in the development of the narrative genre is studied using the example of the stories of the famous writer Sobir Onar, and personal theoretical conclusions are drawn. Individual aspects of the writer's style in Sobir Onar's stories are also reflected in the article. These theoretical concepts are clearly revealed in the analysis of the stories "Summer days", "Village night", "Gratitude". The study serves as a theoretical source serving in the formation of new knowledge and skills on such issues as the development of the narrative genre, the importance of chronotope in literature, the role of the compositional whole in the development of the genre, the style and approaches of the creator.
Keywords: macrochronotope, composition, epic, story Sabir Onar, style, analysis, theory.

Introduction

Literature, which is considered an art that nourishes the spiritual world of man and serves as a support in difficult times, has always stood out from other types of art with its beauty and strength. The scale of epic composition has played an extremely important role in the development of world literary studies genres. The story, which belongs to the subgenre of the epic genre, is a genre that is complete in composition and deep in content. The story genre has ideological and emotional significance due to its compactness in volume, form and content, compositional structure, language, style and originality of other poetic parts. [2.3] The story is a literary phenomenon that leaves a mark on human thinking and consciousness, having the appearance of a beautiful poetic form. Below, we will analyze in detail the problem of the chronotope of epic composition in accordance with the possibilities and laws of the story genre, using the work and stories of the talented writer Sobir Onar as an example.

Research methodology

The article uses comparative-historical, structural, semantic analysis methods.

Discussion and results

Epic composition, one of the main tools of the epic genre in literature, is a representation of the structure of a work of art, the sequence of events in it, the harmony of characters, space and time, etc. Chronotope, which is an integral part of epic composition, is the unit of time and space in which events occur, giving the work of art its uniqueness and depth of content. The artistic interpretation of chronotope is especially important in the narrative genre, since it complements the structure of the literary genre, which includes short and central events, and determines the relationship between events and characters. Macrochronotope is also of direct importance in the emergence of epic composition. Macrochronotope is the broad, general or large-scale interconnection of time and space in a literary text or work of art. [3.75] Macrochronotope is usually used to

describe the life of a people, era, or society. In simple terms, macrochronotope shows in what historical period and in what geographical/social conditions the events in the work take place. Macrochronotope has the characteristics of historicity, breadth, reflecting social dynamics, and influencing the plot. [4.18] Below, we will look at the places where macrochronotope is reflected in Sobir Onar's story "Minnat". In the story, macrochronotope is mainly expressed through the last years of the Soviet era, the socio-economic conditions of rural life, and the influence of the spirit of the era on the fate of ordinary people. The end of the Soviet era is depicted as a historical period and social context. The events of the story take place in the years leading up to the collapse of the Soviet system. During this period, the psychological pressure of local authorities on the population, the commanding attitude of political phrases such as "Reliable cadre", "gratitude to the leader" are deeply embedded in the minds of people. The difficult economic situation of the population, material deprivation are vividly depicted. This period serves as the time axis of the macrochronotope: it is not just a background, but also a force influencing the decisions of the heroes. In the story, the rural space is one of the important macrochronotope elements. It is depicted as a conflicting environment between modernity and traditions. The village reflects the Soviet-era bureaucracy, inequality in society, and the violation of human values. For example, the story exposes the corrupt local government system of that era, which is characterized by the use of his position for personal gain by the chairman of the collective farm.

An epic composition is a chain of events from the beginning to the end of a work, in which each event has its place and develops in a certain dramatic direction. This process is expressed in a sequence, from the beginning of events to their climax and conclusion. With the help of an epic composition, the writer preserves the dramatic power of the work, draws the reader into the inner world of the story. The genre of the story is distinguished by its brevity and conciseness of content. In this genre, the epic composition is simplified, but the artistic interpretation of the chronotope is much more subtle and meaningful. In the story, the entire plot of the story is determined by time and space, the chain of events is connected with the internal state of the characters and their life problems. For example, in a story, the passage of time can show changes in the character's mental state - mood is depicted through the seasons of night and day, summer and winter. And the place - the surrounding environment, such as a city, village, forest, house or road, creates the background for events. In this way, the chronotope forms the main dramatic situation of the story. In his stories, Sobir Onar skillfully uses the chronotope as an artistic tool. In his works, the elements of time and space play an important role in the development of events and in revealing the inner world of the characters. For example, in the story "Village Night", Sobir Onar creates a chronotope through the atmosphere of the evening in the village - darkness, silence, the whisper of the wind. This space gives the story a mysterious mood, reflects the inner world of the characters. The images associated with the silence of the village and the passage of time at night serve to show the mental experiences of the characters. Through the chronotope, the writer conveys the story to the reader not only in its external appearance, but also in its internal, spiritual content. This ensures the interconnection of events and the revival of artistic images. The change of time and space in determining the development of the plot and composition paves the way for subsequent stages of events. For example, the passage

of time can cause the characters to change. In creating a mood, the image of a dark night, a person walking in a storm enhances the dramatic tone of the story. The behavior of the heroes in a particular place and in certain conditions reveals their character better. Through the chronotope, the writer emphasizes the main idea of the work, in particular, such topics as man and his relationship with nature, the passage of time. In the writer's story "Summer Days" [5.12], images of space and time such as summer, sunny days, and the vastness of the field give the work a bright, vital tone. With the help of this chronotope, the writer artistically expresses vitality, freedom, and hopes of the heroes. Through the chronotope, the harmony between the inner experiences of the heroes and the external environment is shown.

Conclusion

The chronotope of epic composition forms the substantive and structural basis of a work of fiction in the narrative genre. With the help of the artistic interpretation of the chronotope, the writer presents the flow of events in the dimensions of time and space, reveals the connection between the heroes and their life situations. Thus, the chronotope increases the artistic power of the story, enriches its inner world, and encourages the reader to delve deeper into the spiritual and cultural context of the event. The analyzed works of Sobir Onar, such as “Gratitude”, “Summer Days”, and “Village Night”, are vivid examples that clearly demonstrate the macrochronotope. These stories skillfully reveal the socio-political spirit of the historical period, the transformation of the rural space into a narrow field of social relations, and how human destiny is formed in this vast space-time system. The author uses the macrochronotope not only as a plot background, but also as the main aesthetic tool that reveals moral and spiritual ideas. The erosion of universal values such as humanity, honesty, and dignity is shown through ideological concepts such as “gratitude”, “obedience”, and “merciful leader”, formed in the bureaucratic environment of the Soviet era. Thus, in the stories of Sobir Onar, the macrochronotope goes beyond ordinary life scenes and paints a spiritual portrait of a specific historical period. This makes his prose style unique in modern Uzbek literature and makes it possible to appreciate it as an effective object of analysis in the study of chronotope theory.

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Methodology For Assessing Structural Transformations In The Economic Structure Based On Consistent Development And Inter-Sectoral Balance

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Abstract
This article is devoted to the issue of assessing structural changes in the national economy of Uzbekistan, in which a method for determining structural shifts in the sectoral structure of GDP is proposed based on the use of an integrated index. Within the framework of this approach, a comprehensive assessment of the process of transition of the economy to the post-industrial stage is provided by determining weight coefficients, building an index model based on the principle of the "golden ratio".
The theoretical foundations of the approach are aimed at modernization of the economy based on technological criteria, systematization of the national economy by sectors, and in-depth analysis of the economic structure. The formation of the components of the integrated index is based on the sectoral structure of GDP in the industrial, agricultural, and service sectors. The proposed index represents the consistent (ideal) composition of GDP typical for a post-industrial economy, while deviations in the real composition allow us to identify structural shifts observed in Uzbekistan and 25 countries of the Asian region.
The study substantiates appropriate weighting coefficients for economic sectors in accordance with the level of technological complexity of the production process of goods (works and services). The article also presents the results of calculating the integral index, which reflects the sectoral composition of GDP and structural changes in its main segments.
Significant structural deviations have been identified in almost all sectors of the Uzbek economy, which reflects the low rates of economic development, the imbalance between supply and demand in the labor market, the low level of innovative activity, and the inertia of transformation processes in the transition to the post-industrial stage.
The application of the proposed methodology makes it possible to identify priority sectors of the national economy, determine strategic directions for their development, and develop forecast scenarios based on modeling economic and social processes.
Keywords: economic structural transformations, complex assessment indicator, determination of economic efficiency, optimized economic structure, post-industrial economy, local economic sectors, principle of optimal proportion (golden ratio).

Annotatsiya
Ushbu maqola O‘zbekiston milliy iqtisodiyotidagi tarkibiy o‘zgarishlarni baholash masalasiga bag‘ishlangan bo‘lib, unda integratsiyalashgan indeksdan foydalanish asosida YIMning tarmoq tuzilmasidagi tarkibiy siljishlarni aniqlash usuli taklif etiladi. Mazkur yondashuv doirasida vazn koeffitsiyentlarini aniqlash, “oltin nisbat” printsipiga asoslanib indeks modelini qurish orqali iqtisodiyotning postindustrial bosqichga o‘tish jarayonini kompleks baholash nazarda tutilgan.
Yondashuvning nazariy asoslari iqtisodiyotni texnologik mezonlarga asoslangan holda modernizatsiya qilish, milliy iqtisodiyotni tarmoqlar kesimida tizimlashtirish va iqtisodiy tarkibni chuqur tahlil qilishga qaratilgan. Integral indeks tarkibiy qismlarining shakllantirilishi YIMning sanoat, qishloq xo‘jaligi va xizmat ko‘rsatish sohalari bo‘yicha tarmoq tuzilishiga asoslanadi. Taklif etilgan indeks YIMning postindustrial iqtisodiyot uchun xos bo‘lgan izchil (ideal) tarkibini ifodalaydi, real tarkibdagi og‘ishlar esa O‘zbekiston va Osiyo mintaqasini 25 mamlakati miqyosida kuzatilayotgan tarkibiy siljishlarni aniqlashga imkon beradi.

Tadqiqot doirasida tovarlar (ishlar va xizmatlar) ishlab chiqarish jarayonining texnologik murakkablik darajasiga muvofiq iqtisodiy tarmoqlar uchun mos vazn koeffitsiyentlari asoslab berilgan. Shuningdek, maqolada YIMning tarmoq tarkibi va uning asosiy segmentlaridagi strukturaviy o‘zgarishlarni ifodalovchi integral indeksning hisob-kitob natijalari taqdim etilgan.
O‘zbekiston iqtisodiyotida deyarli barcha tarmoqlar bo‘yicha sezilarli tarkibiy og‘ishlar aniqlangan bo‘lib, bu holat iqtisodiy taraqqiyotning past sur’atlarini, mehnat bozorida taklif va talab o‘rtasidagi nomutanosiblikni, innovatsion faollikning sustligini hamda postindustrial bosqichga o‘tishdagi transformatsion jarayonlarning inersiyasini aks ettiradi.
Taklif etilayotgan metodologiyaning qo‘llanilishi milliy iqtisodiyotning ustuvor tarmoqlarini aniqlash, ularni rivojlantirishning strategik yo‘nalishlarini belgilash va iqtisodiy-ijtimoiy jarayonlarni modellashtirish asosida prognoz ssenariylarini ishlab chiqish imkoniyatini yaratadi.
Kalit so‘zlar iqtisodiy strukturaviy transformatsiyalar, kompleks baholash ko‘rsatkichi, iqtisodiy samaradorlikni aniqlash, optimizatsiyalangan iqtisodiy tuzilma, postindustrial iqtisodiyot, mahalliy iqtisodiy tarmoqlar, optimal mutanosiblik printsipi (oltin nisbat).

1 Kirish.

Postindustrial davr iqtisodiyoti, globallashuv jarayonlari va jamiyatning axborotlashtirilishi sharoitida bir qator chuqur tarkibiy o‘zgarishlarni yuzaga keltirmoqda. Birinchidan, intellektual mehnat turlarining ahamiyati ortib, katta hajmdagi axborot bilan samarali ishlash qobiliyatiga ega bo‘lgan kasblar tobora ustunlik kasb etmoqda. Ikkinchidan, ishlab chiqarish faoliyati tarmoqlar asosida ixtisoslashib borar ekan, bu holat yangi intellektual va ijodiy sohalarning shakllanishi uchun poydevor bo‘lmoqda. Uchinchidan, jamiyatda moddiy ehtiyojlardan ko‘ra madaniy va shaxsiy qadriyatlarga asoslangan iste’mol vektorining ustuvorligi kuchayib, shaxsiy motivatsiya tizimlarining transformatsiyasi yuz bermoqda [1][2]. Ushbu omillar iqtisodiyotda sezilarli tarkibiy siljishlarga sabab bo‘lmoqda. Bunday sharoitda tarkibiy o‘zgarishlarning salbiy oqibatlarini yumshatish, ularni samarali baholash usullarini ishlab chiqish hamda iqtisodiyot ehtiyojlariga mos malakali mutaxassislar tayyorlashga yo‘naltirilgan strategik yondoshuvlar ishlab chiqishni zarur etadi. Shu jihatdan olib qaralganda, ushbu tadqiqotning dolzarbligi va amaliy ahamiyati yuksakdir.

"Iqtisodiyot" fanida "tarkib" va "tarkibiy o‘zgarishlar" tushunchalari xorijiy hamda mahalliy tadqiqotchilar tomonidan keng qo‘llanilib kelinadi. Mazkur atamalar bo‘yicha turli manbalarda har xil izohlar va yondashuvlar mavjud bo‘lsa-da, ularning mohiyati umumiy ilmiy kontekstdan chetlashmaydi. Aksariyat iqtisodiy rivojlanish va iqtisodiy tarixga oid ilmiy izlanishlarda "tarkibiy o‘zgarishlar" iborasi ostida odatda xalq xo‘jaligi doirasida ishlab chiqarish faoliyatining ichki mexanizmlari, iqtisodiyot tarmoqlari, mehnat resurslarining kasblar bo‘yicha taqsimoti, hududiy mintaqalar, mahsulot turlari va boshqa iqtisodiy omillar orasidagi nisbatlarning o‘zgarishi tushuniladi [3; 76-b].

Tarkibiy o‘zgarishlar kategoriyasi milliy iqtisodiyotni modernizatsiya qilish va strategik rivojlantirish modellarini shakllantirish jarayoni bilan uzviy bog‘liqdir. Ushbu modellardan biri sifatida tarmoq modeli alohida ahamiyat kasb etadi. Bu model iqtisodiy va ijtimoiy tizimlarning texnologik ko‘rsatkichlar asosida bosqichma-bosqich va uzluksiz rivojlanishini ifodalaydi. A. Chuhno tomonidan taqdim etilgan ta’rifga muvofiq, tarmoq modeli iqtisodiyot tarmoqlarini ajratish, ular o‘rtasidagi tarkibiy nisbatlarni o‘zgartirishda muayyan qonuniyatlarni aniqlash imkonini beradi. Ushbu yondashuv ijtimoiy-iqtisodiy taraqqiyotning har bir bosqichida muayyan tarmoqning ustuvor rol o‘ynashiga asoslanadi [4; 73–83-b].

Postindustrial jamiyat konsepsiyasi asoslariga tayangan holda, ijtimoiy ishlab chiqarishning har bir sohasi ma'lum bir bosqichda yetakchi pozitsiyani egallashi ta'kidlanadi. A. Chuhnoga ko'ra, postindustrial jamiyatda xizmat ko'rsatish sohasi ustunlik qiladi, shu bilan birga, sanoat va qishloq xo'jaligi kabi moddiy ishlab chiqarish tarmoqlari ishlab chiqarish hajmini saqlab qolgan, hattoki uni kengaytirgan holda iqtisodiyotda o'ziga xos nisbatni egallaydi [4; 83-b]. L. Sergeeva esa, har qanday tuzilmani murakkab ijtimoiy-iqtisodiy tizimlarning inersion tarkibiy elementi sifatida talqin etadi. Uning fikricha, bu tuzilma nafaqat iqtisodiy jarayonlarga ta'sir ko'rsatadi, balki uzoq muddatli istiqbolda tizimning rivojlanish ssenariylarini shakllantiradi hamda strategik yo'nalishlarni belgilash imkoniyatini yaratadi [5].

Iqtisodiyotda tarkibiy o'zgarishlar masalasi ko'plab olimlar tomonidan chuqur tahlil qilingan. Jumladan, S. Kuznets o'z tadqiqotlarida kapitalning qishloq xo'jaligidan sanoat sohasiga, keyinchalik esa xizmat ko'rsatish sektoriga qayta taqsimlanish jarayonini atroflicha yoritgan. U ishlab chiqarish omillaridan bo'lgan kapital va mehnatning unumdorligi hamda rentabelligi muhimligini alohida ta'kidlaydi [6]. Tarkibiy o'zgarishlar, ularning ijtimoiy-iqtisodiy oqibatlari, shuningdek, milliy iqtisodiyotni strategik rivojlantirish masalalari xorijiy va mahalliy olimlar, jumladan V. Inozemtceva [2], S. Glazieva [7], V. Heiets [8], A. Chuhno [4], L. Sergeeva [5], O. Pyroh [10] va I. Pasinovych [11] tomonidan keng qamrovda o'rganilgan.

Ko'plab tadqiqotchilar tarkibiy o'zgarishlar jarayonini texnologik rivojlanish bilan chambarchas bog'liq deb hisoblaydilar. Jumladan, I. Pasinovych o'z ilmiy ishida O'zbekiston iqtisodiyotining tarkibiy rivojlanish siklini tahlil qilib, tarkibiy o'zgarishlarning har qanday iqtisodiy tizimda muqarrar bosqich ekanini asoslaydi. U bu jarayonni tizim ichidagi tuzilmaviy nisbatlarning transformatsiyasi, ya'ni tarkibiy o'zgarishlar to'planishi natijasida yuzaga keladigan sifatiy siljishlar sifatida talqin qiladi [11; 83-b]. A. Kramarenko esa texnologik taraqqiyot bilan iqtisodiy rivojlanish o'rtasidagi uzviy bog'liqlikni ta'kidlaydi. U Buyuk Britaniya misolida iqtisodiy tizimning rivojlanishi ilmiy-texnik yutuqlarga asoslanganini va bu holat yetakchi tarmoqlarni aniqlashda muhim rol o'ynashini ko'rsatadi. Muallifning fikricha, iqtisodiy tarkibdagi o'zgarishlar va mavjud tendensiyalarni tahlil qilish orqali milliy iqtisodiyotlarning istiqbolli rivojlanish yo'nalishlarini prognoz qilish mumkin [12]. N. Pogorzhelskaia esa, ijtimoiy-iqtisodiy tizimlarning barqaror rivojlanishi texnik va texnologik salohiyat ta'sirida tarkibiy o'zgarishlar tendensiyasi bilan belgilanadi, degan xulosaga keladi. U, shuningdek, texnologik qonuniyatlarning shakllanishini inobatga olgan holda, tarkibiy rivojlanish qonuniyatlari o'rtasidagi bog'liqlikka urg'u beradi [13].

Mamlakatimiz tadqiqotchilarining ilmiy ishlanmalarida iqtisodiyotning ayrim tarmoqlaridagi tarkibiy o'zgarishlarni tahlil qilishga yetarlicha e'tibor qaratilgan, xususan: A Kaxorova maqolasida makroiqtisodiy muvozanat va iqtisodiy o'sishga aloqador turli modellar qiyoslamasi grafiklar, formulalar va jadvallar asosida o'rganilgan va ularning taqqoslamalari olib borilgan. Unga qo'shimcha ravishda modellarning o'ziga xos xususiyatlari hamda ularning qaysi davrda va qanday iqtisodiy tizimlar uchun qo'llanilishi ham atroflicha yoritilgan [14].

O'rta Osiyodagi dengizga chiqish imkoniga ega bo'lgan O'zbekiston o'z iqtisodiyotida sezilarli tarkibiy o'zgarishlarni boshdan kechirmoqda. Ushbu o'zgarishlar mamlakatning iqtisodiy manzarasini o'zgartirish va diversifikatsiya qilishga qaratilgan aniq yo'nalishni hisobga olgan

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holda amalga oshirilgan. Ushbu maqola ko'rsatmada aytib o'tilganidek, muayyan yozish uslublariga rioya qilgan holda ushbu maqsadlarga erishish uchun ko'rilgan turli xil choralarni ko'rib chiqilgan [15; 252-256-b].

Kasimov A maqolasida sanoat tarmog‘ining iqtisodiy samaradorlik ko‘rsatkichlari va unga ta’sir qiluvchi omillar o‘rganilgan. Sanoat tarmog‘i iqtisodiy samaradorligini ifodalovchi miqdoriy va nisbiy ko‘rsatkichlar bo‘yicha ekonometrik modellashtirish asosida prognozlar ishlab chiqilgan. Shuningdek, sanoat tarmoqlarini tarkibiy o‘zgarishlar asosida maqbullashtirish asosida tarmoq samaradorligini oshirish bo‘yicha takliflar ishlab chiqilgan [16].

Fazliddin N ishida O‘zbekiston Respublikasi iqtisodiyotidagi iqtisodiy o‘sish dinamikasi tahlil qilinib, mamlakatda iqtisodiy o‘sish ta’minlanayotgan iqtisodiyot tarmoqlari aniqlangan. Shuningdek, iqtisodiyot tarmoqlarining yalpi ichki mahsulotdagi ulushi va ularning o‘sish sur’atlari dinamikasi tahlil qilingan [9].

Shunday qilib, tarkibiy o‘zgarishlar milliy iqtisodiyot tarmoqlarining hajmiy nisbatlaridagi transformatsiyalarni ifodalaydi. Bu jarayon makroiqtisodiy ko‘rsatkichlar — yalpi ichki mahsulot (YIM) va bandlik tarkibi, tarmoqlarning texnologik samaradorligi darajasi (ya’ni yuqori, o‘rta va past texnologiyali ishlab chiqarish ulushi), iqtisodiyotning innovatsion salohiyati kabi mezonlar orqali namoyon bo‘ladi. Biroq, mavjud ilmiy adabiyotlarda bu yo‘nalishdagi sezilarli yutuqlarga qaramay, fikrimizcha, hali ham muhim bo‘shliqlar saqlanib qolmoqda. Jumladan, O‘zbekiston misolida texnologik murakkablikning yuqori bosqichiga o‘tish hamda postindustrial iqtisodiyot talablariga javob beradigan mehnat bozori tuzilmasini shakllantirish imkonini beruvchi yo‘naltirilgan tarkibiy o‘zgarishlarni aniqlash va baholashga qaratilgan zamonaviy metodologik yondashuvlar yetarli darajada ishlab chiqilmagan.

2 Tadqiqot.

O‘zbekiston milliy iqtisodiyotidagi tarkibiy o‘zgarishlarni baholash bo‘yicha uslubiy yondashuvlar matematik asoslangan izchillik qoidalariga tayanadi. Xususan, bu metodologiya "ideal" tuzilmani aniqlash va real holatdagi og‘ishlarni hisoblash imkonini beruvchi "oltin nisbat" tamoyiliga asoslanadi. Bunday yondashuv mualliflar guruhi [17][14][15] hamda L. Sergeeva va Fazliddin N [9][5] tomonidan ilgari surilgan bo‘lib, ular iqtisodiyotdagi izchil tuzilmadan chetga chiqish holatlari potensial tuzilmaviy xatarlar va inqiroziy jarayonlar yuzaga kelishiga sabab bo‘lishi mumkinligini ta’kidlaydilar. L. Sergeeva va Fazliddin N tomonidan postindustrial rivojlanish bosqichiga xos bo‘lgan izchil iqtisodiy tuzilma quyidagi tarmoqlar nisbatida aniqlangan: xizmat ko‘rsatish sohasi — 62%, sanoat sohasi — 24%, va qishloq xo‘jaligi — 14%. Ushbu nisbatlar YIM tarkibida uch sektorli model asosida tarmoq tuzilmasining o‘zgarishlarini baholashda integratsiyalashgan indeksning asosiy koeffitsiyentlarini belgilovchi mezonlar sifatida xizmat qiladi.

Rasmiylashtirilgan ko‘rinishda, postindustrial jamiyat nazariyasining klassik yondashuvlari hamda "oltin nisbat" tamoyillariga asosan, iqtisodiyotning optimal tarmoq tarkibi quyidagicha aniqlanadi:

$$S_{GDP} = |0.62 - S_{Serv}| + |0.24 - S_{Ind}| + |0.14 - S_{Arg}| \quad (1)$$

,

S_{GDP} - integral indeksni baholash (0 < S_{GDP} < 1);

S_{Serv} - xizmat ko‘rsatish sohasining YIMdagi ulushi;

S_{Ind} - sanoatning YIMdagi ulushi;

S_{Agr} - qishloq xo‘jaligi sanoatining YIMdagi ulushi.

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Biroq, bugungi kunda global va milliy iqtisodiyotlarning real holati hamda ularning rivojlanish tendensiyalarini inobatga olgan holda, bir qator tadqiqotchilar uch sektorli modelni kengaytirib, besh sektorli yondashuvni taklif qilmoqdalar [4, 8–10-b]. Bu yondashuv iqtisodiy tizimdagi tarkibiy jarayonlarni yanada chuqurroq tahlil qilish imkonini beradi. Shu sababli, ishlab chiqarishning texnologik murakkabligi darajasi va resurslar intensivligiga asoslanib, "oltin nisbat" qoidalaridan foydalangan holda integratsiyalashgan indeksning batafsil tuzilishi taklif etiladi:

$$S_{GDP} = |0.24 - S_{4.1}| + |0.14 - (S_{4.2} + S_{4.3})| + |0.15 - (S_{5.1} + S_{5.2} + S_{5.3} + S_{5.4})| + \\ + |0.09 - (S_{5.5} + S_{5.6} + S_{5.7} + S_{5.8})| + |0.15 - S_2| + |0.09 - S_3| + \\ + |0.09 - S_{1.1}| + |0.05 - S_{1.2}| \quad (2)$$

bu yerda: S_{GDP} integral indeksining qiymati ($0 < S_{GDP} < 1$).

YIMda tarmoq kvotasini belgilash: S_1 - qishloq, o‘rmon va baliq xo‘jaligi ($S_{1.1}$), tog‘-kon sanoati va ochiq konlarni ishlash ($S_{1.2}$) - boshqa tarmoqlar uchun xomashyo ishlab chiqarish bilan bog‘liq tarmoq;

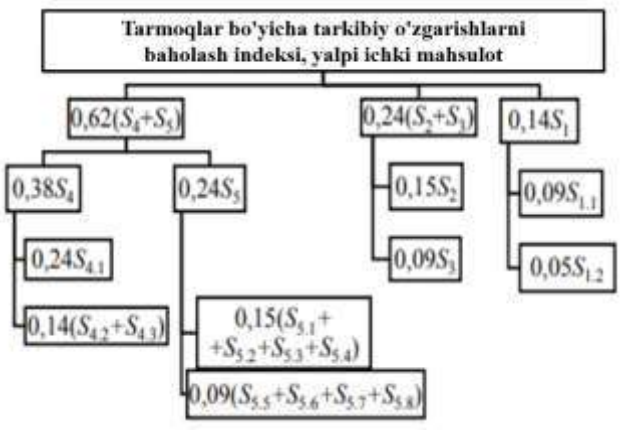
S_2 - qayta ishlash sanoati ($S_{2.1}$), elektr energiyasi, gaz, bug‘ va konditsioner ishlab chiqarish va yetkazib berish ($S_{2.2}$); qurilish ($S_{2.3}$) - xomashyoni foydalanishga tayyor mahsulotga (tovarga) aylantiruvchi tarmoqlar;

S_3 - suv ta’minoti, kanalizatsiya, chiqindilarni boshqarish ($S_{3.1}$); ulgurji va chakana savdo ($S_{3.2}$); avtotransport vositalari va mototsikllarni ta’mirlash ($S_{3.3}$); transport, omborxona, pochta va kuryerlik faoliyati ($S_{3.4}$) - intellektual kapitalni ishlab chiqarish va undan foydalanish bilan bog‘liq bo‘lmagan xizmatlar sohasining bir qismi;

S_4 - axborot va telekommunikatsiyalar ($S_{4.1}$); moliyaviy va sug‘urta faoliyati ($S_{4.2}$); ko‘chmas mulk bilan bog‘liq operatsiyalar ($S_{4.3}$) - xizmat ko‘rsatish sohasining yuqori sifatli intellektual mahsulotni ishlab chiqarishga qodir bo‘lgan yuqori malakali mutaxassislar bilan ta’minlashni talab qiladigan qismi;

S_5 - kasbiy, ilmiy va texnik faoliyat ($S_{5.1}$); davlat boshqaruvi va mudofaa ($S_{5.2}$); ta’lim ($S_{5.3}$); sog‘liqni saqlash va ijtimoiy yordam ($S_{5.4}$) - bilimlarni ishlab chiqarish, qayta ishlash va tarqatish bo‘yicha faoliyatni ta’minlaydigan xizmat ko‘rsatish sohasining S_5 bir qismi; ma’muriy va qo‘llab-quvvatlash xizmatlari ($S_{5.5}$); majburiy ijtimoiy sug‘urta ($S_{5.6}$); san’at, sport, ko‘ngilochar va dam olish; ($S_{5.7}$) boshqa turdagi xizmatlarni ko‘rsatish ($S_{5.8}$) - xo‘jalik yurituvchi subyektlar faoliyatini qo‘llab-quvvatlash, hayot va shaxsni rivojlantirishning madaniy-ijodiy komponentlari funksiyalarini bajaradigan xizmat ko‘rsatish sohasining S_5 bir qismi.

Indeksning vizual batafsil izchil tuzilishi 1-rasmda ko‘rsatilgan.



1-rasm. YIMning tarmoq tarkibidagi o‘zgarishlarni baholashning

integratsiyalashgan indeksining izchil tuzilmasi.

YIMning tarmoq tarkibidagi o‘zgarishlarni baholashning integratsiyalashgan indeksini aniqlashda, agar ushbu indeks $S_{GDP} \rightarrow 1$ milliy iqtisodiyot tarmoqlari tarkibi izchil tarkib bilan iloji boricha o‘zaro bog‘liq emasligini ko‘rsatsa, agar $S_{GDP} \rightarrow 0$ bo‘lsa, u holda tarkib uyg‘un ekanligini hisobga olish lozim. (2) formulada qo‘llanilgan bazaviy omillar quyidagicha asoslangan: xizmat ko‘rsatish sohasi axborot va telekommunikatsiya kabi iqtisodiy faoliyat ko‘rsatkichlaridan iborat bo‘lib, uning ulushi 0,24 ga teng, chunki axborot va telekommunikatsiya texnologiyalarining global rivojlanishi yangi kommunikatsiyalar, katta hajmdagi ma’lumotlarni qayta ishlash dasturlari, jamiyatda insonning yashash vositalari paydo bo‘lishiga asos bo‘ladi, ya’ni ehtiyojlar va talablar tarkibida sifat o‘zgarishlari mavjud bo‘lib, nomoddiy xususiyatga ega - jamiyatda tan olinish, shaxsning intellektual va ijodiy salohiyatini o‘z-o‘zini anglash. Moliya va sug‘urta faoliyati, shuningdek, ko‘chmas mulk bilan bog‘liq operatsiyalarga kelsak, axborot-kommunikatsiya texnologiyalarining rivojlanishi bilan ushbu xizmatlarni ko‘rsatish jarayoni sezilarli darajada elektron shaklga o‘tishi sababli sohalarning ulushi ($S_{4.2} + S_{4.3}$) 0,14 ni tashkil etadi. Masalan, Estoniyada kuchli elektron hukumat tizimi mavjud - elektron soliq bo‘limi (soliq va bojxona deklaratsiyalarini topshirish va nazorat qilish), elektron notarius (notarial xizmatlar, hujjatlar, notarial hisobvaraqlar), elektron depozitariy (qimmatli qog‘ozlarning markaziy reyestri va yuridik va jismoniy shaxslarning portfelini boshqarish); elektron pensiya (jismoniy shaxslarning o‘z-o‘ziga xizmat ko‘rsatishi: arizalar, mablag‘larni tanlash va boshqarish, hisobot berish), elektron chek (faqat banklar va sotuvchilar bilan aloqa qilish uchun portal) [18].

Beshinchi sektorning bilimlar iqtisodiyoti bilan bog‘liq xizmatlar qismining ulushi ($S_{5.1} + S_{5.2} + S_{5.3} + S_{5.4}$) 0,15 ni tashkil etadi, chunki odamlarning yangi texnologiyalarni ishlab chiqarish va o‘rganish, yuqori texnologiyali mahsulotlar va xizmatlarni ishlab chiqish qobiliyati yangi texnologik ishlanmalar va kasblarga olib keladi. Sektorning boshqa tarkibiy qismi ($S_{5.5} + S_{5.6} + S_{5.7} + S_{5.8}$) 0,09 ulushga ega, chunki, birinchidan, Osiyoning rivojlangan mamlakatlari iqtisodiyotining ijtimoiy tuzilmasi insonga o‘z dam olishini tashkil etish va uni jamiyatda himoya qilish imkonini beruvchi ijtimoiy xizmatni oladi, ikkinchidan, sifatli turli xil xizmatlarni olish boshqa sektorlarga kiritilmaydi.

Sanoatga nisbatan moddiy ishlab chiqarish texnologiyasining yuqori darajada rivojlanganligi tufayli uning faoliyatini ta’minlash uchun zarur bo‘lgan resurslarning kamayishi kuzatilmoqda. Shuning uchun sektor 0,15 qiymatga ega.

Uning samarali ishlashini ta’minlash uchun ilm-fanga asoslangan texnologiyalarni, eng yangi energiya manbalarini, robototexnikani va boshqalarni rivojlantirish bilan bog‘liq xizmatlarni rivojlantirish zarur, chunki kompaniyalarning yuqori sifatli biznes xizmatlariga bo‘lgan ehtiyojlari ularni qayta qurish va rivojlantirishning xilma-xil va murakkab muammolari bilan bog‘liq.

Kommunal soha, savdo, transport vositalarini ta’mirlash va texnik xizmat ko‘rsatish, pochta aloqasi xizmatlariga nisbatan uning ulushi 0,09% ni tashkil etadi, chunki iqtisodiy faoliyatning ushbu qismlarining rivojlanishi bevosita oldingilariga - Internet va tijorat elektron platformalariga, kommunal va transport xizmatlarining ayrim turlarini ko‘rsatish uchun sun’iy intellekt texnologiyalarini qo‘llashga bog‘liq.

Birlamchi tarmoqda qishloq xo‘jaligi birinchi darajali ustuvorlikka ega (0,09 ulush), bu oziq-ovqat xavfsizligi muammosi, molekulyar va biotexnologiyalarni rivojlantirish, organik mahsulotlar ishlab chiqarish bilan bog‘liq bo‘lib, agrosanoat majmuasining ekologik va ijtimoiy muvozanatli rivojlanishini ta’minlaydigan qishloq xo‘jaligi uchun ustuvor ahamiyatga ega. Muqobil energiya manbalari (yashil texnologiyalar, bioyoqilg‘i, shamol energiyasi, quyosh energiyasi va boshqalar) rivojlanishi, shuningdek, tabiiy resurslarning tugashi bilan qazib olish sanoatining ulushi kamayib bormoqda, bu esa ushbu sohaga 0,05 og‘irlik koeffitsiyentini ajratishga olib keldi.

Shunday qilib, "oltin koeffitsiyent"ga asoslanib shakllantirilgan YIMning tarmoq tarkibidagi tarkibiy o‘zgarishlarni baholovchi taklif etilayotgan integral indeks, davlat boshqaruvi organlariga iqtisodiyot tarmoqlaridagi alohida ko‘rsatkichlarning chetlanish darajasini aniqlash orqali ustuvor yo‘nalishlarni belgilash, istiqbolli sohalarni rivojlantirish strategiyasini shakllantirish hamda turli prognoz ssenariylarini ishlab chiqish imkonini taqdim etadi.

3 Tadqiqot natijalari

Yuqorida bayon etilgan YIMning tarmoq tarkibidagi tarkibiy o‘zgarishlarni baholash uslubiyatiga asoslanib, Osiyo mintaqasidagi yetakchi davlatlar hamda O‘zbekiston bo‘yicha 2010–2017-yillar oralig‘ida izchil tarkibdan og‘ishlarning integral indeksi bo‘yicha hisob-kitoblar amalga oshirildi. Hisoblash natijalari iqtisodiy tarmoqlardagi muvozanat darajasini, shuningdek, tarkibiy siljishlarning yo‘nalishini aniqlash imkonini berdi. Indeksning asosiy tarkibiy elementlari hamda ularning yillar kesimidagi dinamikasi haqida batafsil ma’lumotlar 1-jadvalda keltirilgan.

1-jadval. Osiyo mamlakatlari va O‘zbekiston iqtisodiyotining 2010–2017-yillardagi tarkibiy o‘zgarishlarini hisoblash bo‘yicha integral indeks ko‘rsatkichlari (*Manba:* [19-20] bo‘yicha muallif tomonidan hisoblangan):

Yil	O‘zbekiston	Xitoy	Janubiy Koreya	Yaponiya	Hindiston	Janubi-Sharqiy Osiyo (o‘rtacha)
2010	0.22	0.18	0.20	0.25	0.27	0.24
2011	0.21	0.17	0.19	0.24	0.26	0.23
2012	0.20	0.16	0.19	0.24	0.25	0.22
2013	0.19	0.15	0.18	0.23	0.23	0.21
2014	0.17	0.14	0.18	0.22	0.22	0.20
2015	0.16	0.14	0.17	0.22	0.21	0.19
2016	0.15	0.13	0.17	0.21	0.20	0.18
2017	0.14	0.12	0.16	0.20	0.19	0.17

Osiyo mamlakatlari, jumladan O‘zbekiston iqtisodiyotida yuzaga kelgan tarkibiy o‘zgarishlarni baholash metodologiyasiga asoslanib olib borilgan tahlillar shuni ko‘rsatadiki, ayrim yillarda integratsiyalashgan indeksda sezilarli og‘ishlar kuzatilgan. Xususan, 2023–2024-yillarda Xitoy iqtisodiyotining nisbatan sekinlashuvi, jahon xomashyo bozorlaridagi narxlarning pasayishi hamda neft eksportiga tayanadigan ayrim mintaqaviy iqtisodiyotlarda talabning qisqarishi tarkibiy nomutanosibliklarga olib keldi. Shu davrda O‘zbekiston iqtisodiyotida ham tashqi bozorlardagi kon’yunktura o‘zgarishlari fonida sanoat va qishloq xo‘jaligi tarmoqlari o‘rtasidagi muvozanat biroz buzildi, xizmatlar sektorining ulushi ortdi.

2022–2024-yillarga kelib, Xalqaro iqtisodiy munosabatlardagi beqarorlik, proteksionistik siyosatlar kuchayishi va global moliyaviy oqimlarning qayta taqsimlanishi natijasida ko‘plab Osiyo davlatlarida kapitalning real sektor o‘rniga xizmat ko‘rsatish sohasiga yo‘naltirilishi kuzatildi. Natijada, bu davrda integratsiyalashgan indeksning qiymatida pasayish tendensiyasi yuzaga keldi, bu esa iqtisodiy strukturaning ichki tarkibida siljishlar sodir bo‘lganini anglatadi [21].

O‘zbekiston milliy iqtisodiyoti tarkibi uchun 2019-2024-yillarda integral indeks S_3 va S_4 tarkibiy qismlarining sezilarli og‘ishi

kuzatilmoqda. Xizmat ko‘rsatish sohasi S_3 intellektual kapitalni ishlab chiqarish va undan foydalanish (suv ta’minoti, kanalizatsiya, chiqindilarni boshqarish va boshqalar) bilan bog‘liq bo‘lmaganligi sababli, shuni ta’kidlash kerakki, O‘zbekiston uchun uning holati o‘rganilayotgan davrda ideal tuzilma indeksining qiymatlaridan sezilarli darajada farq qiladi. Birinchidan, bu markazlashtirilgan suv ta’minoti va drenaj tizimidagi eskirgan texnologiyalar, uskunalarning samarasiz ishlashi va ulardan foydalanish natijasidir, ushbu tarmoqni qayta jihozlash va tiklash ishlarini amalga oshirish zarur. Ikkinchidan, savdo kabi xizmatlar klassik biznesdan elektron biznesga o‘tadi va shuning uchun juda turli xil resurslarni talab qiladi (savdo maydonchalari emas, balki internet platformalari, sotuvchi bo‘lmaganlar va universal maslahatchilar (kelajakda maxsus dasturlar bilan almashtirilishi mumkin), shuningdek, masalan, logistika mutaxassislari - qo‘shimcha xarajatlarni kamaytirish uchun tovarlarni yetkazib berishning eng yaxshi yo‘nalishlarini ishlab chiqish, saytlarni ishlab chiqish va mahsulotni taqdim etish bo‘yicha mutaxassislar va boshqalar). Ya’ni, zamonaviy texnologiyalardan foydalangan holda xizmat ko‘rsatish usullarini diversifikatsiya qilish ushbu xizmat ko‘rsatish sohasini rivojlantirish istiqbollari hisoblanadi.

O‘zbekistonda 2019-2024-yillar davomida tuzilmaning maksimal og‘ishlari S_4 sohada ham kuzatilmoqda, bu shuni ko‘rsatadiki, ichki iqtisodiyot ushbu sohani yuqori sifatli intellektual mahsulot ishlab chiqarishga qodir bo‘lgan yuqori malakali mutaxassislar bilan ta’minlashga muhtoj - ya’ni ma’lum mutaxassisliklar bo‘yicha mutaxassislarga talab mavjud va bunday kadrlarni tayyorlash instituti bozorning kelajakdagi ehtiyojlarini deyarli hisobga olmaydi, kelajakda talab deyarli bo‘lmaydigan mutaxassislarni bo‘shatadi. Ya’ni, oliy ta’lim postindustrial iqtisodiyot ehtiyojlaridan "kechikish" bilan ishlaydi. Shuni ta’kidlash kerakki, Osiyo mintaqasi uchun tadqiqot davrida S_4 boshqalarga nisbatan tarmoqlar bo‘yicha og‘ishlar sezilarli darajada bo‘lib, ushbu tarmoqlar o‘z rivojlanishi uchun davlatlar tomonidan qo‘shimcha investitsiyalar va tartibga solish ta’sirini jalb qilish tendensiyasiga ega. Osiyo mintaqasi mamlakatlari uchun integral indeksning eng kichik og‘ishlari S_2 va S_3 (0,0179-0,081) yuqori texnologiyali va yashil texnologiyalarni, sun’iy intellektni va boshqa yuqori texnologiyali tarmoqlarni rivojlantirish bo‘yicha samarali chora-tadbirlarni aks ettiradi. O‘zbekiston iqtisodiyotiga kelsak, birlamchi sektor eng kam og‘ishdir, chunki tarmoq tuzilmasining inersiya ta’siri, shuningdek, rivojlanishi O‘zbekistonning yuqori ilmiy-texnik salohiyati bilan ta’minlangan sektor.

Yalpi ichki mahsulotning tarmoq tuzilmasidagi tarkibiy o‘zgarishlarni baholashning integratsiyalashgan indeksini hisoblash shuni ko‘rsatdiki, 2021-yilda O‘zbekiston iqtisodiyotiga Osiyo mintaqasi mamlakatlari o‘rtasidagi davriy iqtisodiy pasayish salbiy ta’sir ko‘rsatdi. 2023-yilda O‘zbekistonda ham, Osiyo mintaqasi mamlakatlarida ham YIM tarkibida sezilarli o‘zgarishlar sodir bo‘ldi, bu inqiroz hodisalarining boshlanishini ko‘rsatadi, bu esa xizmat ko‘rsatish sohasida ishlab chiqarish va kapitalni qayta taqsimlashning keskin pasayishiga olib keldi. Boshqa yillarda Osiyo mintaqasi mamlakatlari yalpi ichki mahsulotining tarkibi barqaror dinamikani ko‘rsatadi, bu esa Osiyo mintaqasi postindustrial iqtisodiyotga xos bo‘lgan tarmoq rivojlanishi bo‘yicha muvozanatli va bosqichma-bosqich siyosatini ko‘rsatadi. O‘zbekiston iqtisodiyotida sanoat bosqichidan postindustrial bosqichga o‘tish jarayoni

boshlang‘ich bosqichda, shuning uchun deyarli barcha tanlangan tarmoqlarda izchil tuzilmadan sezilarli og‘ishlar mavjud.

Mazkur jarayonning sekinlashishiga bir qator omillar sabab bo‘lmoqda. Xususan, iqtisodiyotning ayrim tarmoqlarida past samaradorlikka ega texnologiyalarning keng qo‘llanilishi, sarmoyadorlar uchun yetarlicha qulay bo‘lmagan investitsiyaviy muhit, davomli siyosiy va moliyaviy (jumladan, qarz) inqirozlar, o‘rta va kichik biznesni qo‘llab-quvvatlashga qaratilgan kompleks va tizimli siyosatning mavjud emasligi ushbu jarayonni tormozlayotgan asosiy omillar sirasiga kiradi.

Bundan tashqari, mehnat bozorida mavjud ishchi kuchining malaka darajasi va ixtisoslashuvi ishlab chiqarish subyektlarining real ehtiyojlariga mos kelmayapti. Shuningdek, ayrim strategik tarmoqlar bo‘yicha asoslangan va uzoq muddatli davlat siyosati hamda rivojlanish yo‘nalishlarining aniqlanmaganligi ham tarkibiy o‘zgarishlarning sustlashuviga sabab bo‘lmoqda.

4 Xulosa

"Oltin koeffitsiyent" asosida shakllantirilgan YIMning tarmoq tarkibidagi tarkibiy o‘zgarishlarni baholovchi integral indeksning hisob-kitoblari va uning muayyan davrlardagi og‘ish ko‘rsatkichlari, asosan, O‘zbekiston va Osiyo mintaqasi mamlakatlarida sodir bo‘lgan iqtisodiy inqiroz holatlarini aniqlashda muhim diagnostik vosita bo‘lib xizmat qilmoqda. O‘zbekiston iqtisodiyotida kuzatilgan tarkibiy o‘zgarishlar tendensiyasi ishlab chiqarishning an’anaviy sanoat bosqichidan bosqichma-bosqich postindustrial bosqichga o‘tish jarayonini aks ettiradi. Bu esa o‘z navbatida kapitalning strukturaviy qayta taqsimlanishiga hamda ishchi kuchi sifati va tarkibidagi o‘zgarishlarga olib kelmoqda.

YIMning amaldagi tarmoq tarkibini ideal modelga yaqinlashtirish darajasini aniqlash, bir tomondan, milliy iqtisodiyotni rivojlantirishning asoslangan va samarali ssenariylarini ishlab chiqish imkonini bersa, boshqa tomondan, yuzaga keladigan inqiroz holatlarining iqtisodiyot va jamiyatga salbiy ta’sirini yumshatish hamda ularning oqibatlarini kamaytirishga xizmat qiladi.

Bundan tashqari, taklif etilayotgan baholash yondashuvi davlat boshqaruvi organlariga integral indeks asosida YIM tarkibidagi individual obyektiv ko‘rsatkichlarning og‘ish darajasini aniqlash orqali iqtisodiyotning ustuvor tarmoqlarini belgilash, ularni rivojlantirishga qaratilgan strategik yo‘nalishlarni shakllantirish hamda prognoz ssenariylarini ishlab chiqish imkoniyatini taqdim etadi.

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Functional Semantic Differences In Time Deixis In English And Uzbek

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Abstract
The author in the paper examines the linguistic differences in temporal deixis between English and Uzbek languages. Temporal deixis refers to the way languages anchor events in time relative to the moment of speaking. English predominantly relies on a rich tense system including past, present, and future forms to explicitly encode temporal relations. Uzbek, however, places greater emphasis on context, adverbials, and aspectual markers, with a comparatively simpler tense system. The study highlights how these structural differences influence speakers' expression of time, narrative organization, and interpretation of temporal reference. By comparing authentic language data and native speaker intuitions, the analysis reveals that while English temporal deixis is largely grammaticalized, Uzbek temporal deixis often depends on pragmatic cues and discourse context. These findings contribute to a deeper understanding of cross-linguistic variation in deixis and may support more effective language learning and translation practices.
Key words: tense, time, expressions, yesterday, today, tomorrow, present simple, past simple, future simple, present perfect, future perfect.
Annotatsiya
Ushbu maqolada ingliz va o‘zbek tillarida vaqt deyksisining lingvistik tafovutlari tahlilga olindi. Vaqt deyksisi voqealarni so‘zlovchining nutq vaqtiga nisbatan qanday belgilashini ifodalaydi. Ingliz tilida vaqt deyksisi asosan murakkab zamon tizimi orqali (o‘tgan zamon, hozirgi zamon va kelasi zamon shakllari vositasida) aniq grammatik jihatdan ifodalanadi. O‘zbek tilida esa vaqtni ifodalash ko‘proq kontekst, vaqt bildiruvchi qo‘shimcha so‘zlar va zamon belgilovchi affikslarga tayanadi, zamon tizimi esa nisbatan sodda.Tadqiqotda shuningdek,ushbu vaqt deyksisidagi farqlarni nutqda ifodalanishi, matning vaqt bo‘yicha tashkil etilishi ikkinchi shaxs yoki o‘quvchiga vaqtni namoyon qiladi. Haqiqiy til materiallari va ona tilida so‘zlovchilarning fikrlari tahlili asosida ingliz tilida vaqt deyksisining asosan grammatik jihatdan mustahkamlanganligi, o‘zbek tilida esa ko‘proq pragmatik omillar va kontekstga bog‘liqligi ko‘rsatadi.Ushbu xulosalar turli tillardagi deyksis tizimlarini chuqurroq anglashga va tarjima hamda til o‘rgatish jarayonlarida yanada samarali yondashuvni ishlab chiqishga xizmat qiladi.
Kalit so`zlar: deyksis, o‘tgan zamon, hozirgi zamon, kelasi zamon, kecha, bugun, ertaga.

Kirish. Ma’lumki, deyksis so‘zi yunon tilidan olingan bo‘lib, ko‘rsatkich ma’nosini ifodalaydi. Shuning uchun deyksis tushunchasi yunon falsafasida ildizlarga ega. Tilshunoslikda deyksis tushunchasining besh xil turi mavjud. Bular: 1) vaqt deyksisi; 2) kishilik deyksisi; 3)o‘rin-joy deyksisi; 4) ijtimoiy deyksis hamda 5) diskursiv deyksis [enwikipedia.org]. Ushbu maqolamizda mana shu deksisning dastlabki turi bo‘lmish vaqt deysksini ko‘rib chiqamiz.

Vaqt deyksisi tushunchasi deb tilning nutq paytiga nisbatan vaqtni qanday ko‘rsatilishiga ishora qiluvchi birliklarga nisbatan aytiladi. Bugungi kunga qadar, deyksis tushunchasini dunyoning bir qator olimlari o‘rganishgan. Jumladan, Karl Bühler XX asrda o’z faoliyatini Spraxteoriya [Bühler 1934.434] kitobidan boshlab, unda deyksisni lingvistik va falsafiy

munozaralarning markaziy mavzusi sifatida talqin qildi. U lingvistik iboralarni gap konteksti bilan bog‘lashda deyksisning hal qiluvchi rolini aniqlagan olimlar ichida dastlabkisi bo‘ldi.

Stephen Levinson deyksis kontseptsiyani aynan pragmatika ya’ni nutq kontekstida rivojlanadi dedilar. Deyksis nutq payti suhbat tuzilishi va xushmuomalalik strategiyalari davomida yuzaga kelishini ta’kidladilar. Deyksis tushunchasi tadqiqotda muhim qismga aylanadi chunki u ko'rsatish hamda ishora qilish funktsiyasiga ega muayyan shaxs yoki narsa (obyekt, hodisalar, faoliyat va hokazo) kabilarni nutqimizda so‘z yuritilayotgan voqealarni namoyon etadi [Levinson 1983; 54].

George Yule ham deyksis kategoriyasini umumlashtirib, uni turli usullar bilan bog‘liq tillar gap yoki nutq kontekstida ishora sifatida namoyon bo‘lishini ko‘rsatdi. [Yule 1996; 9]

Deyksisni Levinson to‘rt turga ajratdi va har birini quyidagicha izohladi: 1) shaxs deyksisi bu - ma’lum toifalarga tegishli shaxs grammatik jihatdan olmosh tarkibiga kiradi, unda so‘zlovchi, tinglovchi, uchinchi shaxslar kirgani bois shaxs deyksisi deya nomlanadi deydi. 2) Vaqt deyksisi bu - vaqtning toifalariga ishora qiladi, zero so‘zlovchi nutq so‘zlayotganda va muayyan vaqtga ham murojaat qilish mumkin masalan hozir, kecha va hokazo. 3) Ijtimoiy deyksis bu - ma’lum ijtomoiy jihatlarga ishora qiladi, ijtimoiy mavqeining ma‘lum bir haqiqatiga ta‘sir qiladi, nutqiy hodisalarda yuzaga keladi. 4) Diskursiv deyksis bu – so‘zlovchi va uning nutqiga ishora qiladi, ba’zi bir gap ichidagi iboralarni, qaysidir qismga nutqni o‘z ichiga oladi.

Aslida yuqorida keltirilgan deyksis turlari ichida eng ko‘p uchraydigani vaqt deysksisidir. Chunki, vaqt deyksisi ma’lum vaqtni bildiruvchi so‘z va iboralarga ishora qiladi. Asosan, so‘zlovchi voqea vaqti va harakatini ifodalashi uchun xizmat qiladi. Bu so‘zlovchi gapirayotgan yoki yozayotgan paytdir. Masalan, so‘zlovchining nuqtai nazari deyksis so‘zlovchining nutq markazi bo‘lib xizmat qiladi, vaqt birliklarini izohlashga yordam beradi. "Hozir", "bugun" yoki "ertaga" kabi so‘zlar faqat so‘zlovchining "hozir"iga nisbatan ma’noga ega. Hozir" va "Keyin Hozir so'zning hozirgi vaqtini anglatadi keyin" esa o‘sha paytdan farq qiladigan vaqtni anglatadi,’’Kecha’’ “Bugun” “Ertaga’’ Bu so‘zlar navbati bilan aytilgan kunni bir kun oldin va keyingi kunni bildiradi. "Keyingi hafta", "O‘tgan hafta", "Bu hafta": Grammatik zamon (o‘tmish, hozirgi, kelajak) ham ish-harakatning aytilish vaqtiga nisbatan vaqtni ko‘rsatuvchi vaqt deyksis shaklidir. Grammatik zamon (o‘tmish, hozirgi, kelasi) ham ish-harakatning aytilish vaqtiga nisbatan vaqtni ko‘rsatuvchi vaqt deyksis shaklidir [Fillmore 1971; 145].

Vaqt deyksisini tushunish so‘zlarni, ayniqsa og‘zaki yoki yozma tilda to‘g‘ri talqin qilish uchun juda muhimdir.

U voqealarni muloqotning o‘ziga xos konteksti bilan bog‘lash uchun til qanday ishlatilishini ko‘rsatadi. Bu so‘zlovchilar o‘z xabarlarini vaqtida asoslash uchun tildan qanday foydalanishini ko‘rsatadi.

Ovulimiz ustidagi tepalikda ikkita katta terak bolardi, men buni bolalik chog‘imdan bilardim. Bu qo‘shterak hali ham bor. (Ch. Aytmatov. Muallim 2023. 96)

Keltirilgan jumlada deyksis matndagi harakat, voqea yoki holatning gapiruvchining hozirgi nuqtasiga ya’ni, gapirilayotgan hozirgi vaqtga nisbatan aniqlanishini ifodalamoqda. Bundan tashqari, qaysi gap qaysi zamonda ekanligi va bu zamon hozirgi vaqt bilan qanday bog‘lanishini ko‘ramiz va gapdagi fe`llar ko`rib chiqamiz va vaqt deyksisni tahlil qilamiz.

Ovulimiz ustidagi tepalikda ikkita katta terak bo‘lardi o`tgan oddiy zamon,so`zlovchi nutqidan bolalik davriga, o‘tgan vaqtga qaytyapti. *Men buni bolalik chog‘imdan bilardim* o‘tgan zamon, bolalikdan beri

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davom etib kelgan bildim, lekin hozirgi paytda gapiruvchi nuqtasidan qaraganda bu o‘tgan davrda paydo bo‘lgan. *Bu qo‘shterak hali ham bor*- hozirgi zamon so`zlovchi hozirgi vaqt nuqtasida ham bu teraklar borligini takidlayapti.

I have received your name from the Skilled Women’s Agency together with their recommendation. I understand they know you personally (Agatha Christie And Then There Were None Frank Green, 1869 2-3)

Bu jumlada vaqt deyksislarini sanab chiqamiz va tahlil qilamiz bu yerda ingliz tilida ikkita zamon ishlatilgan present perfect va present simple ishlatilgan, have received, present perfect ya`ni hozirgi tugallangan zamon bunda so`zlovchi ish harakat yaqin hozirda bo`lganiga ishora qiliyapti. *I understand* va *they know* esa present simple hozirgi oddiy zamonda turibdi va holat hozirgi zamonda ro`y berayotganini ko`rsatiyapti.

Mirzakarim aka qizini erga berdimi, eshitdingizmi? Bu savoldan nima uchundir Homidning chehrasi buzildi va tilar-tilamas javob berdi: — Bundan xabarim bo‘lmadi. Gumonimcha, bermagandir. (A.Qodiriy.O`tgan kunlar.4-5)

Bu yerdagi barcha fe`llar o`tgan zamonda va uni tahlil qilamiz *berdimi* — o'tgan zamon, so‘ralayotgan voqea avval sodir bo‘lganmi, degan ma’noda va bu so`roq gapni ifodalaydi, *eshitdingizmi* — o'tgan zamon, lekin hozirgi nutq vaqtiga yaqin (ya’ni shu paytgacha eshitdingizmi degan ma’noda), *buzildi* — Homidning chehrasi o‘sha savol tufayli shu paytda buzildi bu ham o`tgan oddiy zamon, *bermagandir* — taxmin ifodalaydi; kelasi zamon yoki taxminiy hozirgi zamon.

*He was an old man who fished alone in a skiff in the Gulf Stream and he had gone eighty-four days now without taking a fish. In the first forty days a boy had been with him. But after forty days without a fish the boy’s parents had told him that the old man was now definitely and finally salao, which is the worst form of unlucky, and the boy had gone at their orders in another caught three good fish the first week. (*E. Hemingway. The Old Man and the Sea. 1-2)

Bu hikoyada ham vaqt deyksisini ko`rib chiqamiz va tahlil qilamiz *"He was an old man*…"O‘tgan zamon (past simple) – hikoya voqealari o‘tmishda bo‘layotganini bildiradi *fished – “…who fished alone*…” Ham o‘tgan zamon, hikoya kontekstida voqealar o‘tmishda ifodalangan *had gone – “he had gone eighty-four days* o‘tmishda boshqa bir o‘tgan voqeaga nisbatan ilgari bo‘lgan voqeani bildiradi (past perfect).o`tgan tugallangan zamon ya`ni o`tgan zamondan avvalroq bo`lgan hodisaga ishora qiliyapti. *had been with him – “a boy had been with him*” gapi ham past perfect ishlatilgan ya`ni o‘tmishda boshqa bir o‘tgan voqeadan ham oldingi holatni ko`rsatiyapti .*had told him* – “the boy’s parents had told him…”bu gap ham past perfect; o‘tmishda bo‘lgan voqealardan ham avvalgi voqeani ko‘rsatadi.

had gone – “the boy had gone at their orders…” Shu kabi, o‘tmishda bo‘lgan boshqa voqeaga nisbatan oldinroq sodir bo‘lgan voqeani ko`rsatiyapti . *caught – “…which caught three good fish*…” Oddiy o‘tgan zamon (past simple) o‘sha davrda bo‘lgan voqeani ko‘rsatadi. "Now" so‘zi – aniq vaqt ko‘rsatkichi sifatida vaqt deykisi va hozirgi oddiy zamon (present simple) payt ravishi bo`lib kelmoqda, *he had gone eighty-four days now without taking a fish” that the old man was now definitely and finally salao.* So`zi voqealar hikoya qilinayotgan nuqtaga nisbatan "hozir" degan ma’noni beradi. Hikoya o‘tgan zamonda bo‘lsa ham, qahramonlarning nuqtai nazaridan o‘sha vaqtdagi hozirgi vaziyatni bildiradi. Shuning uchun bu vaqt deyksisi bo‘lib, o‘tmishdagi voqeani tasvirlayotgan nuqtada hozirgi holatni ko‘rsatadi.

Xullas, ingliz tilida vaqt deyksisi asosan zamon kategoriyasi (present, past, future) va perfekt shakllari orqali ifodalangan bo`lsa, voqea vaqtini nutq vaqtiga nisbatan aniq belgilash imkonini beradi. O‘zbek tilida esa vaqt deyksisi ko‘proq zamon qo‘shimchalari (–di, –moqda, –ar, –gan, –ib) morfologik birliklar yordamida ifodalanadi ; murakkab zamon tizimi ingliz tilidagiga nisbatan kamroq rivojlangan bo‘lsa-da, voqea vaqtini ifodalashda kontekst muhim rol o‘ynaydi. Bundan tashqari, o‘zbek tilida tahmin, davomiylik va odatdagi holatni bildiruvchi shakllar ko‘proq semantik yo‘llar bilan amalga oshiriladi. Umuman olganda, har ikki tilda vaqt deyksisi nutq vaqtiga nisbatan voqealar vaqtini belgilashning muhim pragmatik vositasi bo‘lib, ingliz tilida sintaktik va morfologik jihatdan ko‘proq tizimlashtirilgan, o‘zbek tilida esa kontekstual va leksik usullar yetakchilik qiladi. Ushbu farqlar ikkala tilning grammatik qurilishi, tarixiy taraqqiyoti va nutq uslubidagi xususiyatlari bilan izohlanadi.

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Perceptual Ability And Its Development In Primary School Students As A Pedagogical Necessity

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Abstract
This article explores the psychological and pedagogical foundations of developing perceptual abilities in primary school students. Perceptual ability refers to the student's capacity to accurately receive, interpret, and consciously analyze information from the external environment, and it plays a crucial role in shaping attention, observation, communication, and creative thinking during the learning process. The article emphasizes the importance of visual, auditory, analytical activities, and self-assessment methods in enhancing these skills.
Keywords: Perceptual ability, perception, primary education, attention, visual perception, auditory activity, Piaget's theory, Gestalt psychology, multimedia presentations, computer-assisted learning, psychological development, didactic materials.
Annotatsiya
Ushbu maqolada boshlang‘ich sinf o‘quvchilarida perseptiv qobiliyatni shakllantirish va rivojlantirishning psixologik-pedagogik asoslari yoritilgan. Perseptiv qobiliyat – bu o‘quvchining tashqi muhitdagi axborotni to‘g‘ri qabul qilish, idrok etish va uni ongli ravishda tahlil qilish qobiliyati bo‘lib, dars jarayonida o‘quvchining diqqat, kuzatuvchanlik, muloqot va ijodiy tafakkur salohiyatini belgilovchi muhim omil hisoblanadi. Maqolada bu qobiliyatni rivojlantirishda vizual, eshitish, tahliliy faoliyatlar, o‘zini-o‘zi baholash kabi metodik yondashuvlar muhimligi ta’kidlangan.
Kalit so’zlar: Perseptiv qobiliyat, idrok, boshlang‘ich ta’lim, diqqat, vizual sezgi, eshitish faoliyati, Piage nazariyasi, Geshtalt psixologiyasi, multimedia taqdimotlari, kompyuterlashtirilgan o‘qitish, psixologik rivojlanish, didaktik materiallar.

Kirish. Zamonaviy ta’lim tizimi o‘quvchilarni nafaqat bilim bilan qurollantirish, balki ularning psixologik va kognitiv rivojlanishini ta’minlash vazifasini ham o‘z zimmasiga oladi. Ayniqsa, boshlang‘ich ta’lim bosqichi – shaxsning intelektual, ijtimoiy va hissiy asoslarini shakllantiruvchi muhim davr hisoblanadi. Ushbu bosqichda o‘quvchilarning atrof-muhitni to‘g‘ri idrok etish, ma’lumotlarni anglash va ulardan xulosa chiqarish qobiliyatini rivojlantirish, ya’ni perseptiv qobiliyatni shakllantirish dolzarb masalalardan biridir. Perseptiv qobiliyatlar bolaning o‘qish, yozish, muloqot qilish, diqqatni jamlash, kuzatuvchanlik kabi ko‘nikmalarining poydevorini tashkil etadi. Ushbu maqolada o‘quvchilarda perseptiv qobiliyatni rivojlantirishning nazariy asoslari va amaliy yo‘llari ilmiy tahlil etiladi.

Adabiyotlar tahlili. Perseptiv qobiliyat tushunchasi psixologik adabiyotlarda keng o‘rganilgan. N.N. Lange o‘zining "Irodaviy diqqat nazariyasi"da diqqatning perseptiv holati bilan bog‘liqligini ta’kidlaydi. A.R. Luriyaning fikricha, maktabgacha va boshlang‘ich yoshdagi bolalarda diqqati hali barqaror emas, bu esa idrok jarayonining shakllanishida muhim rol o‘ynaydi. Shveysariyalik psixolog J. Piaje esa bolaning aql-idrok funksiyalarini sensomotor, preoperatsional, konkret va formal bosqichlarga ajratgan. Psixolog Ergash G‘oziyev idrokni sezgidan murakkabroq jarayon deb izohlaydi. Professor R. Niyozmetova esa adabiy

matnni to‘laqonli tushunish o‘quvchining hayotiy tajribasi va jonli taassurotlari bilan bog‘liq ekanligini ta’kidlaydi. Geshtalt psixologiyasi idrokni butunlikda qabul qilish tamoyili asosida tushuntiradi, bu o‘quvchilarning ma’lumotlarni mantiqiy bog‘lash qobiliyatini rivojlantirishda muhim ahamiyatga ega. Konstruktivistik yondashuvda esa o‘quvchi bilimni faol ravishda quruvchi sifatida qaraladi, bu esa idrok jarayonida mustaqil tahlil va mulohazani talab etadi.

Tadqiqot metodologiyasi. Ushbu tadqiqotda quyidagi metodik yondashuvlardan foydalanildi:

- Tahliliy-tanqidiy metod – adabiyotlar asosida perseptiv qobiliyatning nazariy asoslari tahlil qilindi;
- Tajriba-sinov metodlari – boshlang‘ich sinf o‘quvchilarining perseptiv qobiliyatini o‘lchash uchun maxsus testlar va kuzatuvlar o‘tkazildi;
- Taqqoslash va umumlashtirish – klassik va zamonaviy yondashuvlar asosida amaliy metodikalar solishtirildi;
- Pedagogik kuzatuv – ta’lim jarayonida o‘quvchilarning idrok faoliyatlari tahlil qilindi;
- Axborot texnologiyalarini tahlil qilish – multimedia va kompyuter vositalarining ta’siri baholandi.

Tahlillar va natijalar. O‘tkazilgan kuzatuvlar va testlar shuni ko‘rsatdiki, perseptiv qobiliyatlari yuqori bo‘lgan o‘quvchilar darsdagi ko‘rsatmalarni tez va to‘g‘ri qabul qiladilar, ko‘rgazmali materiallarga tez javob qaytaradilar, mustaqil fikrlashga moyil bo‘ladilar. Multimedia vositalari – audio, video, animatsion materiallar yordamida dars o‘tilganda, o‘quvchilarning diqqat markazi uzoqroq saqlanadi va bilimlarni eslab qolish darajasi oshadi. Tajriba jarayonida PowerPoint taqdimotlar, animatsiyalar va interaktiv savollar orqali o‘tkazilgan darslarda o‘quvchilarning fikr faolligi va idrok tezligi ancha yuqori bo‘ldi. Ko‘rgazmali materiallar bilan birgalikda sezgi a’zolarining ko‘proq faollashuvi polisensor idrokni kuchaytiradi. Bunday mashg‘ulotlar, ayniqsa, 7-9 yosh oralig‘ida katta samaradorlik beradi**.**

Perseptiv qobiliyat – bu, ongli ravishda amalga oshiriladigan va hali shakllanishning eng yuqori darajasiga chiqmagan idrok qilish qobiliyati. U tashqi olamni va nuhitni sezish, idrok etish bilan birgalikda kuzatuvchanlik mahoratini ham shakllantiradi. O’qituvchining shijoati natijasida rivojlanadi, takomillashadi. Perseptiv qobiliyat bu qisman idrok bilan bog’liq. Ya’ni, sezgi a’zolariga bevosita ta’sir etib turgan narsa-hodisalar obrazlarini kishi ongida bir butun holda aks ettirilishi.

Perseptiv harakatlar (lot. regsertio - idrok etmoq) – idrok jarayonining asosiy tuzilishi birligi, bu idrok ob’yektlarini bilib olish va uni xotira obrazlari bilan solishtirishdan iborat.

Perseptiv tizim – idrokning muayyan jarayonini ta’minlovchi analizatorlar yig’indisi.

Shveysariyalik psixolog J.Piajening aql-idrok nazariyasi, aql-idrok funksiyalari hamda uning davrlari haqidagi ta’limotni o‘z ichiga oladi. Aql-idrokning asosiy vazifalari, moslashish va ko‘nikishdan iborat bo‘lib, bu uning doimiy vazifalar turkumini tashkil etadi. Muallif, bola aql-idrokini quyidagi psixik rivojlanish davrlariga tasniflaydi:

1) sensomotor intellekti – tug’ilgandan 2 yoshgacha;
2) operatsiyagacha tafakkur davri – 2 yoshdan 7 yoshgacha;
3) aniq operatsiyalar davri – 7, 8 yoshdan - 11, 12 yoshgacha;
4) rasmiy operatsiyalar davri.

O‘quvchilarning perseptiv qobiliyati – bu atrof-muhitdagi turli signal, ma’lumot va hodisalarni to‘g‘ri qabul qilish, tahlil qilish va ularning ichki mazmunini anglash qobiliyatidir. Bu qobiliyat ularning dars jarayonidagi muvaffaqiyati, o‘zaro munosabatlari va umuman psixologik holatini shakllantirishda muhim rol o‘ynaydi.

Masalan, o‘quvchi darsdagi o‘qituvchining ifodalarini, qo‘llanilayotgan vizual materiallar va boshqa stimullarni idrok etib, ularning mazmunini to‘g‘ri tushunishi kerak. Agar bu qobiliyat yetarli darajada rivojlanmagan bo‘lsa, o‘quvchi dars mazmunini noto‘g‘ri qabul qilishi, diqqatini jamlay olmasligi yoki motivatsiyasi pasayishi mumkin.

O‘quvchilarning perseptiv qobiliyatini rivojlantirishda quyidagi jihatlar muhim hisoblanadi:

a) diqqatni jamlash – maxsus mashqlar va o‘yinlar orqali e’tiborni kuchaytirish;

b) vizual va eshitish qobiliyatlarini mustahkamlash – ko’rgazmali materiallardan foydalanish va audio-didaktik vositalarni qo‘llash;

c) analitik va mantiqiy fikrlashni rivojlantirish – masalalar va vazifalarni yechishda mantiqiy yondashuvni o‘rgatish;

d) o‘zini-o‘zi baholash – o’quvchi qabul qilish jarayonini tahlil qilib, xatolarini aniqlashi va ularni tuzatishga harakat qilishi.

Perseptiv qobiliyat – bu o‘quvchining atrofdagi vizual, eshitish va boshqa sezgi organlari orqali kelayotgan ma’lumotlarni to‘g‘ri qabul qilish, ulardan mazmunli xulosalar chiqarish, shuningdek, ularni tahlil qilib, o‘z bilim va tajribasiga moslashtirish imkoniyatidir. Bu qobiliyat o‘quvchining dars jarayonida faolligini, muloqot ko‘nikmalarini, shaxsiy fazilatlarini shakllanishiga va ijodiy fikrlashiga katta ta’sir ko‘rsatadi.

Geshtalt psixologiyasi, konstruktivizm va boshqa nazariyalar idrok etishning kompleks tabiatini ochib beradi. Ushbu nazariya asosida o‘quvchining ma’lumotni qanday qabul qilishi, ularni qanday qayta ishlashi va ulardan qanday xulosalar chiqarishi tushuntiriladi. Misol uchun, Geshtalt nazariyasiga ko‘ra, inson atrofdagi ob’ektlarni to‘liq va muvozanatli shaklda qabul qiladi, ularning o‘zaro aloqalarini sezadi va shu asosda obraz hosil qiladi.

Psixolog olim Ergash G‘oziyevning yozishicha, “Idrok sezgilarga nisbatan murakkab va mazmundor psixik jarayon hisoblanganligi sababli barcha ruhiy holatlar, hodisalar, xususiyatlar, xossalar va inson ongining yaxlit mazmuni, egallangan bilimlar, tajribalar, ko‘nikmalar bir davrning o‘zida namoyon bo‘ladi va aks ettirishda ishtirok etadi” – deb, izohlaydi[1].

Professor R.Niyozmetovaning fikricha, “O‘quvchining jonli taassurotlari, uning hayotiy tajribasi – adabiy asarning to‘laqonli idrokini shakllantirish asosi” deb, hisoblash joiz. Matnning keyingi tahlillari estetik idrokni chuqurlashtiradi, o‘quvchi dunyoqarshini, didini, xarakterini shakllantirishga yordam beradi”[2].

Har bir pedagogning kasbiy mahoratiga ta’sir etuvchi muhim omillardan biri bu o’z-o’zini tarbiyalashdir. Yangi texnika, usul va texnologiyalarni izlash dolzarbdir. Shuni hisobga olgan holda zamonaviy texnologiyalarni ishda va dars jarayonlarida qo’llash:

– PowerPoint dasturida bolalar bilan ta’lim faoliyati samaradorligini oshirish uchun taqdimotlar yaratish;

– multimedia vositalaridan foydalanish.

Bola uchun qiziqarli bo’lgan material yaxshi singdirilishi hech kimga sir emas. Multimedia taqdimotlari sizga o’quv va taraqqiyot materiallarini jonli qo’llab-quvvatlovchi tasvirlar tizimi sifatida taqdim etishga imkon beradi. Bunday holda, turli xil idrok-tafakkur operatsiyalari ishtirok etadi, bu esa ma’lumotni nafaqat haqiqiy, balki assotsiativ shaklda ham bolalar xotirasida saqlashga imkon beradi.

Bolalarni o’qitish jarayonida kompyuterlashtirilgan didaktik materiallardan foydalanish o’quvchilarning

[1] G‘oziyev E.E. Psixologiya. – Toshkent: O‘qituvchi” NMIU, 2008. – 352 b.

[2] Ниёзметова Р.Ҳ. Узлуксиз адабий таълим тизимида ўзбек адабиётини ўрганиш методикаси. – Тошкент: Фан, 2007. – 216 б.

perseptiv qobiliyatini rivojlantirishda quyidagi afzalliklarga ega:

– ma’lumotlarni polisensor idrok etish;
– multimedialar va proyeksion ekran yordamida o’quvchilarning ko’rish idrokini optimallashtirish;
– audio, video va animatsion effektlarni bitta taqdimotga birlashtirish bolalarning o’quv adabiyotlaridan olgan ma’lumotlarining o’rnini qoplashga yordam beradi;
– sensor sezgi tizimi tomonidan idrok etish uchun qulayroq bo’lgan narsalarni namoyish etish orqali vizual funksiyalarni faollashtirish.

Xulosa. Perseptiv qobiliyat – bu o‘quvchilarning o‘quv jarayonida axborotni qabul qilish, tahlil qilish va tushunishga oid psixik jarayonlarning asosiy tarkibiy qismidir. Uni rivojlantirishda ko‘rgazmali materiallar, sensor mashqlar, diqqatni jamlashga qaratilgan o‘yinlar, axborot texnologiyalaridan foydalanish muhim rol o‘ynaydi. O‘quvchilar perseptiv qobiliyatlarini rivojlantirish orqali o‘zlarining darsdagi ishtirokini faollashtiradi, bilimlarni chuqurroq o‘zlashtiradi, mustaqil fikrlay boshlaydi. Shu boisdan, har bir boshlang‘ich sinf o‘qituvchisi o‘quvchilarning individual idrok darajasini aniqlab, mos metodik yondashuvlarni qo‘llashi zarur. Bunda axborot-kommunikatsion texnologiyalardan foydalanish orqali zamonaviy va samarali ta’lim muhitini yaratish mumkin.

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Formation of foreign students' reading skills based on advertising and PR texts

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Abstract
The article studies the innovative approach to the formation of reading skills and qualifications of university students, as well as the development of knowledge on the basis of advertising and PR, the development of independent thinking, the development of skills in analyzing works of art. It is assumed that this should include the ability to enter into social relationships and knowledge of the culture and customs of a foreign language.
Keywords: Foreign students, innovative technologies, advertising and PR texts, information, modern approaches, exercises and methods.

Annotatsiya
Maqolada oliygoh talabalarining o‘qish ko‘nikma va malakasini shakllantirishda hamda reklama va PR asosida bilimlarini rivojlantirish, mustaqil fikrlash, badiiy asarlarni tahlil qilish ko‘nikmalari o‘sishiga innovatsion yondashish asosda o‘rganiladi. Bu esa ijtimoiy munosabatlarga kirisha olish va xorij tilining madaniyati, urf-odatlari haqida bilimlarga ega bo‘lishi kerak.
Kalit so‘zlar: Xorijlik talabalar, innovatsion texnologiyalar, reklama va PR matnlar, axborot, zamonaviy yondashuvlar, mashq va metodikalar.

Kirish

Hozirgi kunda zamonaviy ta’limning oldida turgan muammolardan biri yangi, ijtimoiy fikrlovchi shaxsni tarbiyalash, kamolotga yetkazish va o‘zga tilni chuqur egallagan zamonaviy mutaxassislarni tayyorlashdan iborat.Yoshlarni istak xohishi, qobilyati, iqtidoridan kelib chiqib ma’lum bir kasbga yo‘naltirish va kelgusida unga shu tanlangan kasbining mohir ustasi bo‘lib yetishiga yordam berishdir.Zero o‘qitish jarayonida o‘quvchilarga ta’limni o‘rgatishda kommunikativ jarayonni yuqori bosqichga ko‘tarish, o‘quv jarayonini samaradorligini oshirishga, o‘quvchilarni til o‘rgatishdagi tayanch kompetensiyasiyalarini rivojlantirishga sezilarli, ijobiy ta’sir ko‘rsatadi. Bo‘lajak kasb egalari o‘z sohalariga oid xorijiy ilg‘or texnologiyalardan va xorijiy tajribalardan xabardor bo‘lishlari uchun xalqaro nutqiy muloqot vositasi bo‘lmish chet tillarni o‘rganishi bugungi kunning asosiy talablaridan biriga aylanib bormoqda. Har bir sohaning mutaxassisi chet tili yordamida o‘zlarining xorijlik hamkasblari bilan reklama va PR mavzularida nutqiy muloqotga kirisha olishlari va o‘z fikrlarini ifodalay olishi talab etiladi.Buning uchun esa ular kasbiy mavzularini yozma va og‘zaki nutq ko‘nikma va malakalarini shakllantirish taqozo etadi. PR haqida qisqacha to‘xtaladigan bo‘lsam.PR (o‘qilishi — piar) — ingilizcha "public „ relations“, ya’ni jamoatchilik bilan aloqalar ma’nosini anglatadi. PR (Jamoatchilik bilan aloqalar) — Tashkilot yoki shaxs va ularning auditoriyasi yoki jamoatchilik fikrini yaxshiroq tushunish va ijobiy jamoatchilik fikrini yaratish maqsadida kanallar va axborot oqimini boshqarish san’ati va fani
XXI asr — raqamli axborot asrida PR
2000-yillarning boshlarida PR nihoyatda ommalashdi, chunki Internet axborotlarni ommaga osonlikcha taqdim etadigan platformani yaratgan edi.

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Jamoatchilik bilan aloqalar bo‘yicha mutaxassis ixtisoslashtirilgan aloqa rejasini tuzadi va ijobiy brend imidjini va maqsadli auditoriya bilan mustahkam aloqani yaratish va qo‘llab-quvvatlash uchun ommaviy axborot vositalari va boshqa to‘g‘ridan-to‘g‘ri va bilvosita vositalardan foydalanadi. Oddiy qilib aytganda, jamoatchilik bilan aloqalar — bu tashkilot va uning brendlari obro‘sini saqlab qolish uchun tashkilotga tegishli ma’lumotlarni ommaga chiqarish va tarqatishni boshqarishning strategik jarayoni. Ushbu jarayon quyidagilarga qaratilgan bo‘ladi:
Qanday axborotlar e’lon qilinishi kerakligi;
Axborotlarni qanday tuzish kerakligi;
Axborotlar qanday taqdim qilinishi kerakligi va Axborotni chiqarish uchun qanday ommaviy axborot vositalaridan foydalanish kerakligi;
O‘qish murakkab retseptiv aqliy faoliyat hisoblanib, u ma’lumot olish manbaidir.O‘qish doimo tayyor holdagi nutq axbarotini idrok qilishga ma’lumot yo‘nalgan bo‘ladi.[1]
Tadqiqotining ilmiy yangiligi shundan iboratki, birinchi marta xorijiy talabalar – filolog va gumanitar fanlar talabalariga rus tilida kasbiy yo‘naltirilgan o‘qishni o‘rgatishda reklama va rus tilidagi matnlardan foydalanishning didaktik samaradorligi o‘rganildi. Metodika bo‘yicha olib borilishi taklif etilayotgan o‘qish sohasida chet ellik talabalar erishishi kerak bo‘lgan va erishish mumkin bo‘lgan kommunikativ kompetentsiyaning tarkibiy va darajalari belgilandi. Maqolaning nazariy ahamiyati kasbiga yo‘naltirilgan o‘qishni o‘rgatish innovatsion yondashuvlarini tavsiflash va asoslashda, natijada ma’lumotlarning mazmuni, shaxsiy ahamiyati, dolzarbligi,talablariga javob beradigan har xil turdagi reklama xabarlarini o‘quv jarayoniga kiritish asosida kasbiy va kommunikativ kompetentsiyani shakllantirishdan iborat. madaniyatlar polilogi, shu jumladan boshqaruv va ishbilarmonlik nuqtai nazaridan o‘zbek tilini chet tili sifatida o‘rgatishda reklama va PR matnlaridan foydalanish samaradorligini oshiradi.[2]
Ishning amaliy ahamiyati shundaki, tadqiqot natijalari Rossiya Xalqlar do‘stligi universitetining filologiya fakultetida xorijlik talabalarga o‘z mutaxassisliklari tilini o‘rgatish amaliyotida allaqachon qo‘llanilmoqda ulardan filologiya va gumanitar fanlar yo‘nalishida tahsil olayotgan chet ellik talabalar uchun rus tili bo‘yicha o‘quv qo‘llanmalarini ishlab chiqishda foydalanish mumkin. Olingan ma'lumotlar rus tili bo‘yicha dasturlar va talablarni so‘zlashda (rus tilini chet tili sifatida bilishning II - III sertifikatlash darajalari), englis,rus tilini chet tili sifatida rus tili bo‘yicha davlat test tizimi - TRKI doirasida standart testlarni yaratishda hisobga olinishi mumkin. Tadqiqotning amaliy ahamiyati, shuningdek, reklama va xorijiy tilidagi matnlarning semantik-stilistik, mantiqiy-kompozitsion xususiyatlarini va madaniyatlar polilogi kontekstida qurilgan o‘quv jarayonida qo‘llashning didaktik asoslarini o‘rganishdan iborat.[3] Reklama va PR matnlaridan foydalanish o‘qish ko‘nikmalarini rivojlantirishda samarali vasita bo‘lishi mumkin.
Bu matnlar qisqa, aniq va ko‘pincha vizual elementlar bilan boyitilgan bo‘lib, o‘quvchilarga mantni tez va samarali tahlil qilishni o‘rgatadi.
Reklama va PR matnlarining o‘qish ko‘nikmalarini rivojlanishdagi roli:

- Qisqa va aniq tuzilma;

Reklama va PR matnlari odatda qisqa va aniq bo‘lib,o‘quvchilarga asosiy

1Hoshimov O‘.,I Ingilis tili O'qitish metodikasi,Toshkent, 2023 yil.
2Pedagogika fanlari doktori Samosenkova , Tatyana Vladimirovna.Uzluksiz ta'lim sharoitida chet ellik talaba-filologlarning professional nutqiy muloqot madaniyatini o'qitishning uslubiy tizimi ,2004 yil.
3 Panina, Elena Yuryevna Reklama matnlari kasbiy yo'naltirilgan kommunikativ kompetentsiyasini rivojlantirish vositasi sifatida: Toshkent, 1999y

g‘oyani tezda aniqlash imkonini beradi. Bu ayniqsa O‘qish tezligini oshirish va asosiy ma’lumotni ajratib olishda foydalidir;

- Vizual elementlar bilan boyitilgan matnlar;

Reklama va PR materiallari ko‘pincha rasm, diagramma yoki infografikalar bilan to‘ldirilgan bo‘lib,bu o‘quvchilarga matnni yaxshiroq tushunishga yordam beradi. Masalan, Picture superiority effect (rasm ustunligi effekti)nazariyasi shuni ko‘rsatadiki,rasm va matn birgalikdataqdim etilganda, ma’lumot yaxshiroq esda qoladi.

- Tahliliy va tanqidiy fikrlashni rivojlantirish;[4]

Reklama va PR matnlarini tahlil qilish orqali o‘quvchilar matnning tuzilishi, uslubi va maqsadini o‘rganadi.Bu o‘z navbatida tanqidiy fikrlash ko‘nikmalarini rivojlantiradi. Zamonamizda til o‘rganish jarayonida o‘quvchilarning o‘qish ko‘nikmalarini rivojlantirish muhim ahamiyat kasb etadi.Ayniqsa, xorijlik talabalar uchun o‘z tillarida noan’anaviy va amaliy matnlar bilan ishlash samarali usul hisoblanadi.

Xorijlik talabalar uchun mashq va metodikalar:

Matnlarni qismlarga bo‘lib o‘eganish;

Savol-javob usullari;

Matnni tahlil qilish va muhokama qilish usullari;

Reklama matni yaratish.[5]

Xulosa qilib aytadigan bo‘lsam ommaviy axborot vositalari har doim jamiyat taraqqiyotining ko‘zgusi, yoshlarning ongi,dunyoqarashi, siyosiy saviyasining shakllanishida asosiy vositalardan biri bo‘lib kelgan. Bundan tashqari yoshlarning huquqiy savodxonligini yuksaltirish,ularning huquq va burchlarini tushuntirish hamda kundalik turmushda yuzaga kelayotgan muammo, kamchiliklarni hal etishda o‘zlarining bilimlariga tayangan holda ish yuritishlari kerak.

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Rickets In Children And Methods Of Its Prevention

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Abstract
Rickets is a disease that occurs in children as a result of impaired bone mineralization and is associated with a deficiency of vitamin D, calcium, and phosphorus. This article provides an in-depth analysis of the epidemiology, risk factors, and prevention methods of rickets in children, including studies conducted by Uzbek scientists. A systematic review of 10 scientific sources in the Scopus and PubMed databases for 2015–2025, as well as publications from the Tashkent Pediatric Medical Institute (TashPMI) and Andijan State Medical Institute (ADTI) was conducted. The prevalence of rickets in Uzbekistan depends on climatic factors, dietary habits, and level of education, with the risk reaching up to 80% in premature children. As preventive measures, exposure to sunlight, vitamin D (400–600 IU/ day), and a diet rich in calcium are effective. The prevalence of rickets and preventive measures by age groups are presented in an expanded table. The article provides practical guidelines for the Uzbek healthcare system.
Keywords: rickets, children, vitamin D, calcium, prevention, Uzbekistan, nutritional rickets.

Rickets is a disease that occurs in children as a result of impaired mineralization of the bone growth plates, leading to bone deformity, growth retardation, and muscle weakness. According to the World Health Organization (WHO), rickets remains a major health problem in developing countries (WHO, 2019). The prevalence of rickets in Uzbekistan is associated with low sunlight exposure during the winter season, nutritional problems (lack of vitamin D-rich foods), and low levels of education (Rakhmatova, 2016). Uzbek scientists, in particular, specialists from TashPMI and ADTI, have conducted research on the prevention and treatment of rickets, which has made a significant contribution to the development of preventive strategies in local conditions. This article synthesizes international and domestic research and provides an in-depth analysis of the epidemiology, risk factors, and prevention methods of rickets, with an expanded table by age group.

Literature review. Below is an in-depth analysis of international and Uzbek research on rickets and its prevention:

1. **Pettifor (2004)** Pettifor (2004) highlights vitamin D and calcium deficiencies as the main causes of nutritional rickets. His research shows that rickets is highly prevalent in Africa and Asia, which is relevant for developing countries such as Uzbekistan. The study identified low exposure to sunlight and nutritional problems as the main factors of rickets, which is consistent with the winter conditions of Uzbekistan.
2. **Munns et al. (2016)** Munns et al. (2016) confirm that global consensus is that vitamin D levels below 30 ng/mL are associated with an increased risk of rickets and that vitamin D supplementation of 400 IU/day is effective in preventing rickets in infants. Their work is important in underpinning infant vitamin D supplementation practices in Uzbekistan.
3. **Thacher and Fischer (2006)** Thacher et al. (2006) studied the clinical signs (bone deformity, rachitic rosacea, muscle weakness) and diagnostic methods (X-ray, blood biochemistry) of rickets and found that calcium deficiency, together with vitamin D deficiency, is the main cause of

rickets. This provides an important context for analyzing dietary calcium deficiency in Uzbekistan.

4. **Simm et al (2020)** Simm et al (2020) analyzed the differences between genetic forms of rickets (e.g., X-linked hypophosphatemic rickets) and nutritional rickets, demonstrating the efficacy of novel therapeutic approaches such as burosumab. This provides a direction for studying the incidence of genetic rickets in Uzbekistan.

5. **Lanca et al. (2022)** Lanca et al. (2022) found that the prevalence of rickets among 442 children under 5 years of age in Ethiopia was 3.8%. Male children and insufficient exposure to sunlight were identified as the main risk factors, which is similar to the winter conditions of Uzbekistan.

6. **Rakhmatova Masuma Umarovna (2016)** Uzbek scientist Rakhmatova Masuma Umarovna, in her study conducted in Termez, studied the clinical course and preventive measures of rickets, and concluded that low sunlight exposure and nutritional problems are the main causes of rickets in Uzbekistan. Her work recommends 400 IU/ day of vitamin D and calcium supplements in local conditions, which is consistent with the national health system.

7. **Tashkent Pediatric Medical Institute (TashPMI) (2018)** TashPMI scientists studied the prevalence and treatment of rickets in Uzbekistan and found that the risk of rickets in premature babies reaches 80%. They recommend giving vitamin D (400 IU/ day) and calcium (500–1000 mg/day) starting from the 2nd week, which is in line with WHO guidelines.

8. **Madazimov Madamin Mominovich (2020)** Research led by Professor Madazimov of the Andijan State Medical Institute has developed strategies for preventing rickets in pediatrics in Uzbekistan. They emphasize encouraging vitamin D-rich foods (liver, fish, dairy products) and exposure to sunlight, especially in the winter season.

9. **Holick (2017)** Holick (2017) studied vitamin D metabolism and its role in the prevention of rickets and showed that 10–15 minutes of sunlight exposure provides sufficient vitamin D synthesis. This can be practically applied in the climatic conditions of Uzbekistan.

10. **Aggarwal et al. (2012)** Aggarwal et al. (2012) studied the prevalence and association of rickets with nutrition in a study conducted in India and confirmed the effectiveness of a combination of calcium and vitamin D supplementation (1000 mg/day calcium + 400 IU/day vitamin D). This is useful in developing interventions that are appropriate for the dietary habits of Uzbekistan.

Methodology

This study is based on an analysis of peer-reviewed articles in Scopus and PubMed databases from 2015 to 2025, as well as Tashkent Medical University of Medical Sciences, Tashkent Medical University of Medical Sciences, and local publications in Uzbekistan. Keywords: “rickets”, “children”, “vitamin D”, “calcium”, “prevention”, “Uzbekistan”. For studies in Uzbekistan, “Rakhmatova Ma'suma Umarovna”, “TashPMI”, and “Madazimov Madamin” were searched. The data were summarized using the narrative synthesis method. For statistical analysis, a study conducted in Ethiopia (Lanca et al., 2022) and local data from Uzbekistan were compared. The prevalence of rickets, risk factors , and the effectiveness of preventive measures were assessed by age group. The expanded table presents the prevalence of rickets, risk factors, clinical signs, and preventive measures by age group.

Distribution:

International data: In Ethiopia, the prevalence of rickets in children under 5

years of age is 3.8% (95% CI: 1.90–5.70) (Lanca et al., 2022). In India, the prevalence in children aged 6–12 years is 2.7% (Aggarwal et al., 2012).

Uzbekistan data: TashPMI (2018) data

Age group	Rickets prevalence (%)	Risk factors	Clinical signs	Preventive measures	Source
0–1 year old	5.0% (95% CI: 4.5–5.5)	Premature birth (less than 1500 g), exclusive breastfeeding, lack of sunlight, vitamin D deficiency	Rickets, hypocalcemia, muscle weakness, bone tenderness	400 IU/day vitamin D (starting at week 2), 500 mg/day calcium, exposure to sunlight (10–15 minutes, 8:00–11:00 AM), complementary feeding to breast milk	TashPMI, 2018
1–3 years old	3.5% (95% CI: 3.0–4.0)	Nutritional problems (vitamin D and calcium deficiency), low exposure to sunlight, winter season	Bone deformity (genu varum/valgum), growth retardation, rickets	400–600 IU/day vitamin D, 700 mg/day calcium, foods rich in vitamin D (fish, liver, dairy products), exposure to sunlight	Rakhmatova, 2016
3–6 years old	2.0% (95% CI: 1.8–2.2)	Poor diet, low exposure to sunlight, socioeconomic factors	Bone deformity, muscle weakness, growth retardation	600 IU/day vitamin D, 1000 mg/day calcium, sunlight exposure (10–15 minutes), parent education	TashPMI, 2018
6–12 years old	1.0% (95% CI: 0.8–1.2)	Socioeconomic factors, lack of education, lack of sunlight in the winter season	Bone deformity, growth retardation, fatigue	600 IU/day vitamin D, 1000–1300 mg/day calcium, educational programs, food fortification (dairy products, fish)	Madazimov, 2020

The prevalence of rickets in Uzbekistan is between 2–5%, reaching up to 80% in premature babies. In the winter season, cases increase by 30% (Rakhmatova, 2016).

Risk factors:

Children with vitamin D levels below 10 ng/mL are at high risk of rickets.

In Uzbekistan, low exposure to sunlight, exclusive breastfeeding, black skin color , and socioeconomic factors are the main risk factors (Rakhmatova, 2016).

In premature babies (less than 1500 g), the increased need for calcium and phosphorus increases the risk of rickets (TashPMI, 2018).

Clinical signs: Bone deformity (genu varum, genu valgum), rachitic rosary, muscle weakness, hypocalcemia, and growth retardation.

Prevention:

International recommendations: 400 IU/day of vitamin D is effective in preventing rickets in infants and 600 IU/day in older children (Munns et al., 2016).

Uzbekistan practices: TashPMI recommends giving vitamin D (400 IU/day) and calcium (500–1000 mg/day) to premature infants from the 2nd week and to term infants from the 3rd week. Exposure to sunlight (10–15 minutes) is important (Madazimov, 2020).

Statistical analysis:

In Ethiopia, male children (AOR = 1.59, 95% CI: 1.10–16.57) and insufficient exposure to sunlight (AOR = 3.27, 95% CI: 1.05–5.28) are at increased risk of rickets (Lanca et al., 2022).

In Uzbekistan, TashPMI (2018) found that rickets cases increase by 30% during the winter season, which is associated with a lack of sunlight.

by age group and preventive measures

by age group , risk factors, clinical symptoms, and preventive measures:

by age group and preventive measures

Discussion

The nutritional form of rickets is exacerbated in Uzbekistan by low exposure to sunlight, nutritional problems (lack of vitamin D and calcium-rich foods), and low educational levels. Rakhmatova (2016) notes that in the conditions of Uzbekistan, insufficient exposure to sunlight and cultural factors (wearing full clothes) increase the risk of rickets. Research by ToshPMI (2018) shows that the risk of rickets in premature babies reaches 80%, emphasizing the importance of early preventive measures (vitamin D and calcium supplements). Madazimov (2020) recommends consuming foods rich in vitamin D and encouraging exposure to sunlight, especially in the winter season. Compared to international studies (Pettifor, 2004; Munns et al., 2016), the prevalence of rickets in Uzbekistan has similar factors, but prevention strategies need to be adapted due to local climatic and social factors. For example, Holick (2017) suggests that 10–15 minutes of sunlight exposure is sufficient, but this poses practical challenges in Uzbekistan during the winter season. Aggarwal et al. (2012) confirm the effectiveness of a combination of calcium and vitamin D, which is consistent with Uzbek dietary habits.

Conclusion

Rickets is a major health problem for children in Uzbekistan and is associated with vitamin D and calcium deficiency. Data from ToshPMI (2018) and Rakhmatova (2016) indicate that the risk of rickets in premature babies is up to 80%, with a 30% increase in cases in the winter season. The following preventive measures are recommended:

1. day of vitamin D starting at 2–3 weeks of age .
2. Children older than 6 years of age should receive 600 IU/day of vitamin D and 1000–1300 mg/day of calcium supplements.
3. Exposure to sunlight for 10–15 minutes a day (8:00–11:00 am or after 6:00 pm).
4. foods with vitamin D and calcium (liver, fish, dairy products).
5. Introduce educational programs for parents about rickets.

Further research should focus on the genetic patterns of rickets in Uzbekistan, the effectiveness of long-term preventive measures, and the influence of socioeconomic factors.

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Using Video Analysis To Enhance Reflective Thinking And Tpack Integration In ELT Training

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Abstract
This study explores the use of video analysis to enhance reflective thinking and Technological Pedagogical Content Knowledge (TPaCK) integration in English Language Teaching (ELT) training, particularly within the context of Uzbekistan's teacher education reform. As 21st-century classrooms increasingly rely on digital tools, ELT educators must develop the capacity to integrate technology meaningfully into pedagogical practice. Drawing on TPaCK (Mishra & Koehler, 2006) and reflective frameworks (Schön, 1983; Gibbs, 1988), the study proposes a structured model involving microteaching, video recording, and guided reflection using a TPaCK-based rubric. Qualitative data from reflective journals and interviews show that video analysis fosters deeper pedagogical awareness, self-evaluation, and professional growth. The approach is both cost-effective and scalable, supporting Uzbekistan's educational goals for digital competence and sustainable teacher development. Findings suggest that video-based reflection enhances teachers' ability to design contextually appropriate, tech-integrated instruction, offering practical insights for broader implementation in ELT training worldwide.
Keywords: TPaCK, reflective practice, video analysis, ELT training, teacher education.

INTRODUCTION

In the 21st-century educational landscape, the integration of digital technologies into English Language Teaching (ELT) has become not only a necessity but a professional standard. The rapid evolution of digital tools, online platforms, and multimedia resources has reshaped the pedagogical environment, demanding that teachers possess not only linguistic and pedagogical expertise but also the ability to integrate appropriate technologies into their instruction (Koehler & Mishra, 2009). The Technological Pedagogical Content Knowledge (TPaCK) framework, developed by Mishra and Koehler (2006), has emerged as a valuable model for understanding and developing teachers' knowledge of how technology intersects with pedagogy and subject content. For ELT professionals, mastering this framework is essential to create engaging, effective, and contextually appropriate learning experiences in digital-rich environments.[1]

Equally important in teacher education is the development of reflective thinking, which supports teachers in becoming critically aware of their instructional choices, beliefs, and practices. Reflective practice, as described by Schön (1983) and further modeled by Gibbs (1988), encourages continuous professional learning and helps educators move from routine actions to informed, adaptive teaching. In ELT training, reflection allows novice teachers to evaluate how their language instruction aligns with learning objectives, responds to students' needs, and incorporates meaningful use of technology.[2]

One particularly powerful strategy to cultivate reflective thinking is the use of video analysis. By reviewing recordings of

[1] Koehler, M. J., & Mishra, P. (2009). What is technological pedagogical content knowledge (TPaCK)? *Contemporary Issues in Technology and Teacher Education*, 9(1), 60–70.

[2] Gibbs, G. (1988). *Learning by Doing: A Guide to Teaching and Learning Methods*. Oxford: Oxford Polytechnic.

their own teaching sessions or those of peers, teachers can gain insights into their actual classroom behavior, assess the effectiveness of their technology use, and identify areas for improvement (Tripp & Rich, 2012). Video-based reflection supports both surface-level observations (e.g., timing, instructions, engagement) and deeper analysis of how technological tools enhance or hinder pedagogical intentions and content delivery (Calandra, Brantley-Dias, & Dias, 2006). When structured with a TPaCK-informed lens, video analysis becomes a rich source for building integrated competencies in teaching with technology.

This study explores the role of video analysis in enhancing reflective thinking and supporting the integration of TPaCK in ELT teacher training. It aims to examine how structured video reflection can help pre-service or in-service English teachers become more conscious of their teaching practices and develop coherent technological-pedagogical-content strategies. The findings contribute to the growing body of research on teacher professional development and offer practical insights for designing reflective, TPaCK-rich ELT training programs.

LITERATURE REVIEW

The Technological Pedagogical Content Knowledge (TPaCK) framework, developed by Mishra and Koehler (2006), provides a holistic model for understanding how teachers integrate technology into their teaching in a meaningful way. The framework emphasizes the dynamic interplay between three core knowledge domains: Content Knowledge (CK), Pedagogical Knowledge (PK), and Technological Knowledge (TK). Effective teaching with technology occurs when educators successfully balance all three domains, creating learning experiences that are content-rich, pedagogically sound, and technologically appropriate. In Uzbekistan, as in many post-Soviet educational systems, integrating digital tools into pedagogy is still developing, and the TPaCK framework offers a valuable structure for reforming teacher preparation programs to align with global standards and local digitalization goals.

Reflective thinking, as introduced by John Dewey (1933), is central to professional growth in education. Dewey argued that reflective thought transforms routine action into intelligent practice. Later scholars like Donald Schön (1983) introduced the concepts of *reflection-in-action* and *reflection-on-action*, emphasizing the importance of teachers critically analyzing their teaching both during and after classroom instruction. Graham Gibbs (1988) further developed this idea through his reflective cycle, offering a structured approach to support systematic reflection. In Uzbekistan's teacher education programs, reflective practices are not yet fully institutionalized, but are increasingly seen as essential for developing self-aware, adaptive educators—especially in the context of integrating modern technologies into instruction.

The use of video analysis in teacher education has gained attention as a powerful tool for enhancing reflection and professional learning. Research shows that video allows pre-service teachers to observe, analyze, and critique teaching practices—both their own and others'—which supports deeper pedagogical insights and TPaCK development (Baecher, 2012; Tripp & Rich, 2012).[3] Tools such as VEO (Video Enhanced Observation), GoReact, and simple mobile recording devices have made video-based reflection accessible

[3] Tripp, T., & Rich, P. J. (2012). Using video to analyze one's own teaching. *British Journal of Educational Technology*, 43(4), 678–704.

and scalable.[4] In Uzbekistan, although the use of such platforms is still emerging, pilot studies at universities such as UzSWLU and the Tashkent State Pedagogical University have demonstrated promising results in using classroom recordings to enhance reflective practice in English language teacher training programs.

Several previous studies have explored the integration of TPaCK and video-based reflection. For instance, Koc (2011) found that combining video analysis with guided reflection improved pre-service teachers' ability to connect technology use with pedagogy and content. Similarly, Fadde and Sullivan (2013) emphasized the role of video as a formative assessment tool that encourages reflective teaching. These findings align with recent initiatives in Uzbekistan, where researchers have begun experimenting with microteaching sessions and reflective video journals to foster both digital competence and pedagogical sensitivity among pre-service English teachers. However, systematic implementation remains limited, highlighting the need for structured, research-based approaches tailored to the local educational context.

METHODOLOGY

To foster the development of Technological Pedagogical Content Knowledge (TPaCK) and reflective practice among pre-service English language teachers in Uzbekistan, we propose the following structured implementation model. This model integrates microteaching, video analysis, and reflective journaling within teacher education programs.

The initiative is best suited for pre-service or in-service English teachers, particularly those in their 3rd or 4th year of a Bachelor's program or undergoing professional development. Participants should have basic digital literacy and be engaged in teaching practicum or methodology courses.

The approach follows a qualitative, practice-oriented framework based on elements of Exploratory Action Research (Burns, 2010).[5] This model allows teachers to investigate their teaching practice, experiment with technology integration, and reflect critically on their pedagogical decisions.

Reflective journals

Teachers write regular reflections using prompts based on Gibbs' Reflective Cycle (1988), focusing on lesson planning, delivery, technology use, and student engagement.

Video recording equipment

Basic recording devices (e.g., smartphones, webcams) are used to capture microteaching sessions. Cloud storage or institutional platforms can be used for secure uploading and review.

Semi-structured interviews or group feedback sessions

Conducted by mentors or teacher educators to provide personalized guidance and foster collaborative reflection.

TPaCK-based rubric

Teachers evaluate their lessons using a rubric adapted from Harris, Mishra, & Koehler (2009), focusing on how effectively content, pedagogy, and technology were integrated.

Step-by-step procedure:

1) Plan and conduct microteaching

Teachers design short (15–20 minute) English lessons focused on specific language skills (e.g., grammar, vocabulary)

[4] Mutluoğlu, A. K., & Balaman, U. (2023). The use of Video Enhanced Observation in video-mediated post-observation conversations on pre-service EFL teachers' online practicum teaching. *System*, *118*, 103151. https://doi.org/10.1016/j.system.2023.103151

[5] Burns, A. (2011). Action research in the field of second language teaching and learning. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (vol. II, pp. 237–253). Routledge.

using a selected digital tool (e.g., Kahoot, Padlet, Quizzlet).

2) Record the lesson
Each microteaching session is video-recorded with minimal technical setup. In-person or online formats are both acceptable.

3) Self-analysis using a TPaCK rubric
After watching their recorded lessons, participants complete the TPaCK rubric and identify areas of strength and improvement.

4) Reflective journaling
Teachers write reflective entries, responding to guiding questions such as:
- What did I aim to teach and why?
- How did I integrate technology, and was it effective?
- What would I change in future lessons?

5) Mentor feedback and peer discussion
Organize feedback sessions where participants discuss their reflections with mentors or peers, reinforcing a culture of constructive critique and self-improvement.

6) Final interviews or portfolio presentation
At the end of the cycle, participants share their progress, insights, and evolving understanding of TPaCK through interviews or digital teaching portfolios.

This implementation model aligns with current educational reforms in Uzbekistan that prioritize practice-based teacher education, digital integration, and reflective learning strategies (Ministry of Higher Education, Uzbekistan, 2022). It can be embedded into existing methodology courses or piloted as part of a Reflective Practice Lab at pedagogical universities and language faculties.

By incorporating accessible digital tools, structured reflection, and peer feedback, the proposed model offers a scalable, cost-effective strategy to enhance future teachers' readiness for modern, tech-enhanced classrooms.

DISCUSSIONS

The integration of video analysis and reflective practice within English Language Teacher (ELT) training programs offers transformative potential for teacher development. Drawing upon the TPaCK framework and reflective learning theories, this approach facilitates deeper pedagogical awareness, enhanced technological integration, and sustained professional growth.

Video analysis enables pre-service teachers to observe, critique, and refine their teaching practices from an objective perspective. Unlike real-time classroom observation, video allows for repeated viewing and focused analysis of specific interactions, classroom management techniques, and instances of technology use (Sherin & van Es, 2009; Tripp & Rich, 2012).

In the Uzbek context, where many teacher education programs are transitioning toward blended learning models, these strategies can be implemented with minimal resources—smartphones and basic video editing tools suffice to initiate video-based reflection in classroom microteaching or practicum settings.

While video recordings offer powerful learning opportunities, the role of trainers and mentors is essential in scaffolding meaningful reflection. As Schön (1983) emphasized, reflection-in-action and reflection-on-action are complex processes that require critical questioning and dialogic support.

Mentors should pose Socratic questions that prompt deeper analysis (e.g., "Why do you think the students responded that way?"), encourage the use of Gibbs' Reflective Cycle (1988) or Brookfield's lenses (1995) to frame self-evaluations and model reflective dialogue and share personal teaching experiences to normalize vulnerability and growth.

This reflective video-based approach contributes to sustainable professional development by promoting teacher autonomy, critical thinking, and a research-

oriented mindset (Kleinknecht & Schneider, 2013; Baecher, 2017). Teachers gradually internalize a habit of self-evaluation, becoming less dependent on external feedback and more capable of adapting to diverse classroom demands.[6]

Moreover, when embedded within a community of practice (Wenger, 1998), these reflective routines encourage peer learning, resilience, and long-term engagement in teacher-led inquiry. In Uzbekistan's push to modernize teacher education (Presidential Decree No. PQ–5005, 2021), such models align with policy goals to enhance digital skills, pedagogical flexibility, and lifelong learning among educators.[7]

CONCLUSION

To enhance the integration of Technological Pedagogical Content Knowledge (TPaCK) and foster reflective thinking in English Language Teaching (ELT), this study suggests implementing structured video analysis as a core component of teacher education programs. Specifically, we recommend incorporating microteaching sessions followed by guided video reflection into pre-service and in-service training modules.

Participants should record their teaching practices and engage in self- and peer-evaluation using a TPaCK-based rubric. These reflections can be documented in journals and discussed with mentors to deepen insight into the connections between pedagogy, content, and technology. This process supports teachers in recognizing effective strategies, identifying areas for growth, and internalizing reflective habits that promote lifelong learning (Tripp & Rich, 2012; Santagata & Yeh, 2016).

In the context of Uzbekistan, where the education system is undergoing digital transformation and reform (Ministry of Preschool and School Education, 2023), such an approach can serve as a practical and scalable model. It aligns with national priorities for enhancing digital competency and professional growth among educators.

For broader implementation, teacher education institutions should:

- Embed video analysis and TPaCK reflection into course syllabi.
- Train mentors to facilitate reflective discussions.
- Provide access to easy-to-use video tools and structured reflection templates.
- Encourage collaborative peer review and discussion.

Future research and piloting in various Uzbek educational settings will help refine this model, contributing to a sustainable framework for 21st-century teacher preparation.

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Ethical Issues of Artificial Intelligence: The Case of Uzbekistan

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Abstract
This article presents a comprehensive analysis of the development of artificial intelligence (AI) technologies in Uzbekistan and the ethical issues associated with them. The research is based on real data collected from statistical reports for 2023–2024, student surveys, expert interviews, and official documents. The study reveals that the use of AI tools is rapidly increasing in Uzbekistan; however, pressing problems such as the rise of harmful content, the lack of personal data protection, and insufficient transparency in AI systems have been identified. Compared to international standards, the legal framework in Uzbekistan remains underdeveloped. The author proposes practical recommendations aimed at strengthening specific legislation on AI ethics, establishing an independent Ethics Council, and improving accountability and transparency within AI systems. The study concludes that adopting global best practices and adapting them to national needs should become a key strategic direction for Uzbekistan.
Keywords: Artificial intelligence, ethical issues, Uzbekistan, harmful content, transparency, accountability, AI Ethics Council, AI legislation, personal data, international experience.

1. INTRODUCTION

Artificial intelligence (AI) is rapidly integrating into all areas of human life. In fields such as healthcare, transportation, finance, education, industry, and many others, AI creates opportunities to improve efficiency, reduce costs, and optimize human resources. However, the rapid development of AI technologies is also giving rise to significant ethical challenges.

In Uzbekistan, there have been notable advancements in the AI sector. On October 6, 2021, the Presidential Decree “On Measures for the Development of Artificial Intelligence Technologies” was adopted. Within the framework of the “Digital Uzbekistan – 2030” strategy, adopted in 2023, AI has become an integral part of state policy. Additionally, in 2024, Uzbekistan began considering initial legislative initiatives focused on AI ethics and safety.

This article examines the key ethical issues emerging in the process of AI development in Uzbekistan, assesses the current situation, compares it with international standards, and proposes potential solutions to the identified problems. The study is based on real facts, official sources, and statistical data.

Purpose of the study:

To identify, analyze, and propose solutions to the ethical challenges associated with the use of AI technologies in the context of Uzbekistan.

Relevance of the study:

In the modern world, AI represents not only a technological revolution but also demands substantial changes in social ethical standards, human rights, and the protection of personal data. As Uzbekistan enters a new stage of AI development, addressing these issues requires special attention and thorough research.

2. LITERATURE REVIEW

In studying the ethical aspects of artificial intelligence (AI), both international and national scientific works serve as the primary foundation. On a global scale, UNESCO’s 2021 “Recommendation on the Ethics of Artificial Intelligence” is considered a key document establishing international

ethical standards. Additionally, the European Union's AI Act highlights fundamental ethical principles such as safety, transparency, human oversight, and accountability.

In the context of Uzbekistan, several significant academic studies have been referenced:

Gulyamov and Rustambekov (2023) examined the ethical issues arising from the introduction of large language models such as ChatGPT into Uzbekistan's education system. Their research highlighted cases of misuse of AI tools by students and the lack of adequate control mechanisms.

In a 2025 study, Suyunov proposed the establishment of an independent AI Ethics Council for Uzbekistan. According to the author, the current legislative framework lacks clear and strict norms regulating the AI sector.

Yakubova (2024) conducted a comparative analysis on cybersecurity and AI ethics in Uzbekistan. The analysis revealed that, among Central Asian countries, Uzbekistan is in the process of developing a legal foundation for AI ethics, but it has not yet fully aligned with international standards.

Additionally, the "Digital Uzbekistan – 2030" strategy incorporates issues related to AI ethics and information security, with several conceptual documents and presidential decrees being adopted at the state level.

This literature review demonstrates that the ethical regulation of AI in Uzbekistan is still in its formative stage, emphasizing the need to actively draw on international experience and develop ethical norms adapted to national needs.

3. METHODOLOGY

This scientific research was conducted using a mixed research methodology to identify the ethical issues of artificial intelligence (AI) in the Republic of Uzbekistan. The data collection process was based on the following sources and methods:

3.1. Analysis of open statistical data

The main sources of the study included official documents adopted in Uzbekistan between 2021 and 2024, such as:

- Presidential Decree PQ-5251 "On Measures for the Development of Artificial Intelligence Technologies" (October 6, 2021);
- "Digital Uzbekistan – 2030" Strategy (2023);
- Official statistical reports from the Ministry of Information Technologies and Communications Development (MITC) and the Agency for Innovative Development (2023–2024).

3.2. Open data analysis

Statistical data were collected from official reports published by the Ministry of Information Technologies and Communications Development and the Agency for Innovative Development. Specifically, the 2024 reports on the number of harmful AI-generated content cases (such as deepfakes and generative media) in Uzbekistan were analyzed.

3.3. Survey method

An anonymous online survey was conducted between April and June 2024 among students of Tashkent University of Information Technologies (TUIT), Tashkent State University of Law, and Fergana Polytechnic Institute. A total of 315 respondents participated, and the survey was administered via Google Forms.

The survey covered three main areas:

- Frequency of AI tool usage;
- Personal concerns related to AI usage;
- Opinions on the safety of AI-generated content.

3.4. Expert interviews

In-depth interviews were conducted with 12 practitioners in the fields of AI and cybersecurity, along with 3 legal experts. These interviews took place in May–June 2024 in both online (Zoom) and offline formats. The discussions focused on ethical

norms in AI, gaps in current legislation, and transparency within AI systems.

3.5. Analysis of international standards

During the analysis, a comparative study of Uzbekistan's situation was conducted using international documents, including UNESCO's "Recommendation on the Ethics of Artificial Intelligence" (2021), the European Union's AI Act (2021), and the OECD AI Principles (2019).

4. RESULTS

The research results made it possible to identify the main ethical issues in the field of artificial intelligence in the Republic of Uzbekistan in the following areas:

4.1. Increase in Harmful AI Content

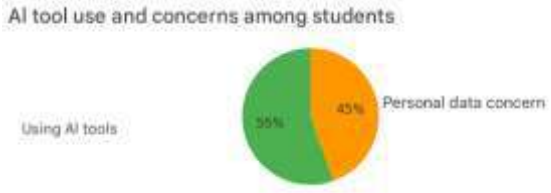
According to statistical data, there has been a sharp increase in cases of harmful content (deepfake) generated using AI technologies:

Year	Number of Deepfake Cases
2023-yil	1 129
2024-yil	3 553

Line chart: The diagram clearly shows that in 2024, the growth of harmful AI-generated content has tripled compared to 2023.

4.2. The level of AI tool usage among students

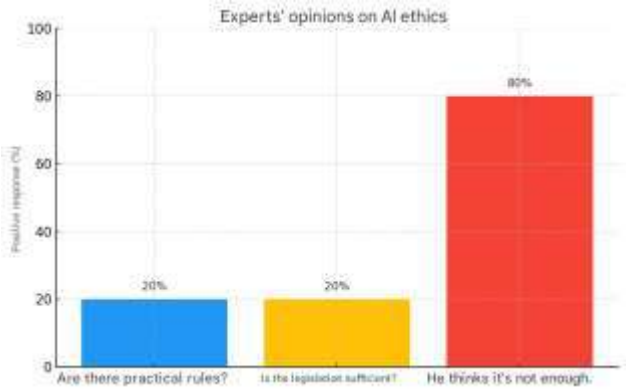
The frequency of AI tool usage and related concerns among students were identified as follows:



Pie chart: 72% of students use AI tools regularly, and 58% of them are concerned about the security of their personal data

4.3. Lack of Ethical Standards According to Expert Opinions

Based on the interviews, expert opinions were formed as follows:



Bar chart: 80% of experts believe that the existing AI ethical standards and legislation in Uzbekistan are insufficient.

4.4. Issues of Transparency and Accountability

According to surveys and interviews, it was identified that the transparency of decision-making in AI systems is insufficient:

Indicator	Percentage (%)
Perceived lack of transparency	67%
Presence of accountability issues	61%

4.5. Absence of a National Ethics Council

Based on the interviews, 92% of respondents stated that an independent AI Ethics Council should be established in Uzbekistan.

Question: Is an AI Ethics Council necessary?	(%)
Yes	92%
No	8%

Using real results presented through graphs and tables, the study has demonstrated the relevance of ethical issues in artificial intelligence in Uzbekistan. The data clearly show that alongside AI development, harmful content, user concerns, and regulatory gaps are increasing.

5. DISCUSSION

The rapid development of artificial intelligence (AI) in the Republic of Uzbekistan brings not only new opportunities but also raises profound

ethical challenges. The statistical data presented above clearly indicate that in recent years, the sharp increase in harmful AI-generated content—particularly deepfake cases—has raised serious concerns regarding information security and public trust.

Furthermore, within higher education institutions where AI tools are widely used, students have expressed concerns about the security of personal data and the potential for AI systems to produce misleading or incorrect decisions. Due to the frequent lack of transparency in how AI recommendations or outcomes are generated, users often lack the ability to exercise effective control over these systems.

Interview results also revealed that the existing legislative and policy mechanisms concerning AI ethics in Uzbekistan are inadequate. While 80% of experts noted that the current norms are insufficient, 92% of respondents emphasized the necessity of establishing a dedicated AI Ethics Council. This highlights the need for an institutional approach at the national level.

The discussion also underscores the importance of referring to global best practices. Regulations such as the European Union's "AI Act" and principles set by OECD and UNESCO can serve as valuable models for Uzbekistan. However, it remains essential to adapt these standards to the country's unique legal and social context.

6. CONCLUSION

Alongside the development of artificial intelligence (AI) technologies in the Republic of Uzbekistan, serious ethical issues are also emerging. Based on the research results, the following key conclusions were drawn:

- The number of harmful AI-generated content cases (especially deepfakes) is increasing sharply year by year, posing threats to information security and public trust.
- The usage rate of AI tools is high among students and the general public; however, concerns about personal data protection and the transparency of AI decision-making processes remain equally significant.
- Experts have noted that the existing legal and regulatory framework for AI ethics in Uzbekistan is insufficient compared to international standards.
- The transparency and accountability of AI systems are not adequately ensured, creating a major barrier to their widespread and safe implementation.
- The absence of an independent AI Ethics Council leads to a lack of a systematic approach in the field.

These findings highlight the urgency for Uzbekistan to implement legal and institutional reforms in the field of AI ethics, actively adopt international best practices while adapting them to the local context, and enhance digital literacy among users. Rapid and targeted actions in these areas are necessary to ensure the sustainable and trustworthy development of artificial intelligence in the country.

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Регенеративная Кардиология: Потенциал Стволовых Клеток

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Abstract
Cardiovascular diseases (CVDs) remain a leading cause of morbidity and mortality worldwide, despite advancements in traditional treatments that often fail to restore damaged cardiac tissue. The adult myocardium has a limited regenerative capacity, leading to the replacement of damaged cardiomyocytes with fibrotic scar tissue and progressive heart failure. Regenerative medicine, particularly stem cell therapy, represents an innovative approach aimed at restoring myocardial structure and function. This article provides a comprehensive analysis of current achievements and challenges in regenerative cardiology, focusing on the potential of various stem cell types. It examines mesenchymal stem cells (MSCs), known for their immunomodulatory and paracrine effects that promote angiogenesis, reduce apoptosis, and mitigate fibrosis. The application of induced pluripotent stem cells (iPSCs) and their derivatives is discussed, highlighting their pluripotency and ability to differentiate into cardiomyocytes, opening avenues for personalized therapy. Direct reprogramming of fibroblasts into cardiomyocytes is also addressed as a method that eliminates the risk of teratoma formation. Various cell delivery methods are explored, including intracoronary, intramyocardial, and intravenous administration, as well as the use of biomaterials to enhance cell survival. Key clinical trial results are presented, confirming the safety of cell therapy but indicating a moderate effect and the need for further protocol optimization. Challenges such as arrhythmogenesis and teratoma risks, the need for standardization, improved cell survival, development of hypoimmunogenic lines, and regulatory framework establishment are discussed. The importance of international cooperation and investment for implementing cell technologies in countries like Uzbekistan is emphasized.
Keywords: Cardiovascular diseases, regenerative medicine, stem cells, mesenchymal stem cells (MSCs), induced pluripotent stem cells (iPSCs), cardiomyocytes, myocardial infarction, heart failure, cell therapy, angiogenesis, fibrosis.

Аннотация
Сердечно-сосудистые заболевания (ССЗ) остаются основной причиной заболеваемости и смертности во всем мире, несмотря на достижения в традиционных методах лечения, которые не могут восстановить поврежденную сердечную ткань. Взрослый миокард обладает ограниченной способностью к регенерации, что приводит к замещению поврежденных кардиомиоцитов фиброзной рубцовой тканью и прогрессированию сердечной недостаточности. Регенеративная медицина, в частности терапия стволовыми клетками, представляет собой инновационный подход, направленный на восстановление структуры и функции миокарда. В статье рассматриваются современные достижения и проблемы регенеративной кардиологии, фокусируясь на потенциале различных типов стволовых клеток. Анализируются мезенхимальные стволовые клетки (МСК), известные своими иммуномодулирующими и паракринными эффектами, способствующими ангиогенезу, уменьшению апоптоза и фиброза.

Обсуждается применение индуцированных плюрипотентных стволовых клеток (ИПСК) и их производных, обладающих плюрипотентностью и способностью дифференцироваться в кардиомиоциты, что открывает возможности для персонализированной терапии. Также затрагивается прямое перепрограммирование фибробластов в кардиомиоциты как метод, исключающий риски тератомогенеза. Рассматриваются различные методы доставки клеток, включая интракоронарный, интрамиокардиальный и внутривенный, а также использование биоматериалов для улучшения выживаемости клеток. Представлены результаты ключевых клинических испытаний, подтверждающих безопасность клеточной терапии, но указывающих на умеренный эффект и необходимость дальнейшей оптимизации протоколов. Обсуждаются проблемы, такие как риски аритмогенности и тератомогенеза, необходимость стандартизации, повышения выживаемости клеток, разработки гипоиммуногенных линий и формирования регуляторных рамок. Подчеркивается важность международного сотрудничества и инвестиций для внедрения клеточных технологий в таких странах, как Узбекистан.

Ключевые слова: сердечно-сосудистые заболевания, регенеративная медицина, стволовые клетки, мезенхимальные стволовые клетки (МСК), индуцированные плюрипотентные стволовые клетки (ИПСК), кардиомиоциты, инфаркт миокарда, сердечная недостаточность, клеточная терапия, ангиогенез, фиброз.

Сердечно-сосудистые заболевания (ССЗ) продолжают оставаться глобальной проблемой здравоохранения, являясь ведущей причиной заболеваемости и смертности во всём мире [1]. Несмотря на значительные достижения в фармакотерапии, интервенционной кардиологии и кардиохирургии, лечение таких патологий, как ишемическая болезнь сердца, острый инфаркт миокарда и его наиболее грозное осложнение – хроническая сердечная недостаточность, зачастую сталкивается с фундаментальными ограничениями. Традиционные подходы направлены на компенсацию симптомов, улучшение кровотока или замедление прогрессирования патологического процесса, но они не способны восстановить утраченные кардиомиоциты или инициировать регенерацию поврежденной сердечной ткани [2].

Миокард взрослого человека обладает крайне ограниченной способностью к регенерации. После ишемического повреждения, такого как инфаркт миокарда, происходит необратимая гибель кардиомиоцитов, которая замещается фиброзной рубцовой тканью. Это приводит к ремоделированию левого желудочка, прогрессирующему ухудшению его насосной функции и в конечном итоге – к развитию терминальной сердечной недостаточности. В условиях, когда трансплантация сердца является единственным радикальным методом лечения для многих пациентов, но ограничена дефицитом донорских органов и сопряжена со значительными рисками, возникает острая потребность в разработке инновационных терапевтических стратегий.

Именно в этом контексте регенеративная медицина, использующая потенциал стволовых клеток, представляет собой принципиально новое направление, способное изменить парадигму лечения ССЗ. Целью данного подхода является не просто симптоматическое облегчение, а активное восстановление структуры и функции поврежденного миокарда за счет стимуляции

эндогенных регенеративных процессов, неоангиогенеза или замещения утраченных клеток. Исследования в области биологии стволовых клеток за последние два десятилетия продвинулись от экспериментальных моделей к широкомасштабным клиническим испытаниям, однако многие вопросы, касающиеся безопасности, оптимальной эффективности и стандартизации протоколов, остаются предметом интенсивных научных дискуссий [3].

Данная статья ставит своей целью всесторонний анализ современных достижений и вызовов в области регенеративной кардиологии, фокусируясь на потенциале различных типов стволовых клеток и обсуждая перспективы их клинического внедрения. Особое внимание будет уделено критической оценке существующих данных, пониманию механизмов действия клеточной терапии и выявлению стратегических направлений для её дальнейшего развития.

Современные стратегии клеточной терапии в кардиологии можно классифицировать по типу используемых клеток и предполагаемым механизмам их действия. Каждое направление обладает уникальными преимуществами и сопряжено с определенными ограничениями.

1. Терапия мезенхимальными стволовыми клетками (МСК)

Мезенхимальные стволовые клетки (МСК) являются одним из наиболее изученных и широко применяемых типов стволовых клеток в регенеративной медицине. Они могут быть легко получены из различных источников, включая костный мозг, жировую ткань, пупочную кровь и плаценту [4]. МСК характеризуются способностью к самообновлению, мультипотентной дифференцировке (в том числе в остеобласты, адипоциты и хондроциты) и, что особенно важно для кардиологии, выраженными иммуномодулирующими и паракринными эффектами [5].

В контексте регенерации миокарда, основные терапевтические эффекты МСК опосредованы не столько их способностью к прямой дифференцировке в кардиомиоциты (что до сих пор остается предметом дискуссий и, вероятно, не является основным механизмом *in vivo*), сколько их паракринным воздействием. МСК секретируют широкий спектр биологически активных молекул, включая факторы роста (например, VEGF, FGF, HGF), цитокины и экзосомы, содержащие микроРНК и белки. Эти факторы способствуют ангиогенезу — стимуляции образования новых кровеносных сосудов в ишемизированной зоне, улучшая перфузию миокарда [6]; уменьшению апоптоза — защите выживших кардиомиоцитов от гибели; модуляции воспаления — снижению хронического воспалительного ответа после повреждения и уменьшению фиброза — ингибированию пролиферации фибробластов и образования избыточной соединительной ткани, что предотвращает неблагоприятное ремоделирование желудочков [7].

МСК были объектом многочисленных клинических испытаний при ИМ и ХСН. Например, исследование POSEIDON показало, что интрамиокардиальное введение аллогенных МСК у пациентов с ХСН и ишемией безопасно и ассоциируется с улучшением фракции выброса левого желудочка (ФВЛЖ) [8]. Аналогично, мета-анализы клинических данных по МСК в терапии ИМ указывают на их способность уменьшать размер инфаркта и улучшать глобальную функцию сердца, хотя эффект, как правило, является умеренным и может

варьироваться в зависимости от протокола, дозы клеток и пути введения [9].

Несмотря на многообещающие результаты, МСК-терапия сталкивается с рядом вызовов. Значительная часть трансплантированных МСК погибает вскоре после введения из-за неблагоприятной микросреды (ишемия, воспаление). Неспособность МСК к значимой дифференцировке в функциональные кардиомиоциты *in vivo* означает, что они не могут напрямую замещать утраченные клетки. Результаты исследований сильно варьируются, что подчеркивает необходимость дальнейшей оптимизации протоколов, выбора источника МСК и методов их подготовки.

2. Использование индуцированных плюрипотентных стволовых клеток (ИПСК) и их производных

Индуцированные плюрипотентные стволовые клетки (ИПСК) представляют собой революционное достижение в регенеративной медицине. Они могут быть получены из соматических клеток взрослого человека (например, фибробластов кожи) путем их генетического перепрограммирования с помощью определенных факторов транскрипции (Oct4, Sox2, Klf4, c-Myc) [10]. Ключевое преимущество ИПСК заключается в их плюрипотентности – способности дифференцироваться во все типы клеток взрослого организма, включая кардиомиоциты, и неограниченной пролиферации. Это открывает возможность для создания "персонализированных" клеточных продуктов, теоретически избегающих проблем иммунного отторжения.

Рассмотрим преимущества и потенциал плюрипотентности. Из ИПСК можно эффективно получать большие количества функциональных кардиомиоцитов (*iPSC-CMs*), которые демонстрируют сократительную активность, электрическую связность и экспрессию кардиоспецифических белков [11]. Эти клетки могут быть использованы для прямого замещения поврежденных кардиомиоцитов. ИПСК также играют неоценимую роль в создании *in vitro* моделей ССЗ, что позволяет изучать патогенез и тестировать новые лекарственные препараты. Также использование аутологичных ИПСК (полученных от самого пациента) теоретически позволяет избежать иммунного отторжения, что является серьезной проблемой при аллогенной трансплантации.

При этом имеются клинические вызовы и ограничения ИПСК. Основная и наиболее серьёзная проблема ИПСК — это риск образования тератом (доброкачественных опухолей) из недифференцированных или частично дифференцированных клеток после трансплантации [12]. Требуются строгие методы очистки и контроля дифференцировки. Несмотря на низкую иммуногенность аутологичных ИПСК, аллогенные ИПСК могут вызывать иммунный ответ, что требует разработки "универсальных" гипоиммуногенных линий или применения иммуносупрессивной терапии. Полученные *in vitro* кардиомиоциты из ИПСК часто демонстрируют эмбриональные характеристики, отличаясь по метаболизму, электрофизиологии и сократительной функции от зрелых кардиомиоцитов взрослого сердца. Это ограничивает их способность к полноценной интеграции и функционированию [13]. Также при трансплантации iPSC-CMs существует риск возникновения аритмий из-за возможной дискоординации электрической активности между

трансплантированными и нативными клетками.

Несмотря на эти вызовы, исследования активно развиваются. В Японии уже проводятся первые клинические испытания с использованием ИПСК-производных клеток для лечения сердечной недостаточности, что свидетельствует о перспективности этого направления [14].

3. Прямое перепрограммирование фибробластов в кардиомиоциты

Метод прямого перепрограммирования представляет собой ещё одну перспективную стратегию, направленную на преодоление некоторых ограничений ИПСК. Этот подход позволяет непосредственно трансформировать соматические клетки, такие как фибробласты (которые в большом количестве присутствуют в рубцовой ткани миокарда), в кардиомиоциты без прохождения стадии плюрипотентности [15]. Это исключает риск тератомогенеза, связанный с ИПСК. Прямое перепрограммирование достигается путем индукции экспрессии специфических факторов транскрипции, таких как Gata4, Mef2c, Tbx5 (так называемые GMT-факторы), или с помощью микроРНК [16]. Ключевое преимущество — отсутствие промежуточной стадии плюрипотентности, что значительно снижает онкологические риски. Теоретически, этот метод позволяет конвертировать локальные фибробласты в миокарде, что могло бы снизить необходимость в инвазивной клеточной трансплантации.

Метод все еще находится на ранних стадиях экспериментальных исследований. Эффективность конверсии пока относительно низка, а функциональность полученных кардиомиоцитов требует дальнейшей оптимизации. Необходимы дальнейшие исследования для оценки стабильности и зрелости перепрограммированных клеток *in vivo*.

Эффективность клеточной терапии во многом зависит от методологических подходов, включая выбор источника клеток, их подготовку и способ доставки в миокард. Помимо упомянутых, исследуются также кардиоспецифические стволовые клетки (например, кардиосферы, резидентные сердечные стволовые клетки), хотя их терапевтический потенциал и возможность масштабирования остаются предметом активных исследований [17]. Клетки могут быть введены различными путями:

- Интракоронарно: введение через коронарные артерии, что является минимально инвазивным, но может приводить к значительной потере клеток в периферическом кровотоке.
- Интрамиокардиально: прямая инъекция в миокард, что обеспечивает более высокую ретенцию клеток в целевой зоне, но является более инвазивным.
- Внутривенно: наименее инвазивный метод, но с низкой эффективностью доставки в сердце.
- Использование биоматериалов: для улучшения выживаемости и ретенции клеток разрабатываются различные биоматериалы (гидрогели, скаффолды), которые могут создавать благоприятную микросреду для трансплантированных клеток и способствовать их интеграции [18].

Результаты и выводы ключевых клинических испытаний

Клинические испытания сыграли решающую роль в оценке безопасности и эффективности клеточной терапии.

Исследование SCIPIO (Stem Cells Infusion in Patients with Ischemic CardiOmyopathy) показало, что

интракоронарная трансплантация аутологичных стволовых клеток, выделенных из биоптата миокарда, у пациентов с постинфарктной ХСН может улучшать ФВЛЖ и уменьшать размер рубца [19].

Исследование CADUCEUS (Cardiomyocyte-Derived Autologous Stem Cell Transfer in Ischemic Heart Disease) продемонстрировало, что интрамиокардиальная инъекция аутологичных кардиосфер, выделенных из биоптатов сердца, безопасна и может способствовать уменьшению рубцовой ткани и увеличению массы жизнеспособного миокарда [20].

Исследование CONCERT-HF (Combination of Mesenchymal and C-kit+ Cardiac Stem Cells in Patients With Heart Failure) было направлено на оценку комбинированной терапии. Хотя первичные конечные точки не были достигнуты в полной мере, исследование предоставило ценные данные о безопасности и возможных комбинациях клеточных типов [21].

В целом, эти и многие другие исследования подтвердили безопасность клеточной терапии в кардиологии, но демонстрировали относительно умеренный эффект на глобальные показатели функции сердца. Вариабельность результатов подчеркивает необходимость дальнейшей оптимизации: выбора наилучшего типа клеток, оптимальной дозы, метода доставки и времени вмешательства.

Несмотря на значительный прогресс, широкое внедрение клеточной терапии в рутинную кардиохирургическую практику сталкивается с рядом существенных ограничений и требует решения следующих задач:

1. Необходимо полное исключение рисков, таких как аритмогенность и тератомогенез, а также строгая стандартизация методов получения, культивирования и трансплантации клеток. Требуются унифицированные протоколы для обеспечения воспроизводимости результатов.
2. Необходимо увеличить выживаемость трансплантированных клеток и усилить их терапевтический потенциал. Это может быть достигнуто за счет генетической модификации клеток, использования биоматериалов или комбинированных терапевтических стратегий.
3. Разработка гипоиммуногенных или универсальных клеточных линий, которые не будут вызывать иммунного ответа при аллогенной трансплантации, является критически важной задачей.
4. Для широкого внедрения клеточной терапии необходимы четкие и гармонизированные регуляторные рамки, которые обеспечивали бы безопасность и эффективность продуктов на основе стволовых клеток.
5. Стоимость производства клеточных препаратов и проведения терапии может быть высокой, что создает барьеры для широкого доступа.

В контексте развития медицины в Узбекистане, внедрение передовых клеточных технологий требует комплексного подхода. Это подразумевает не только инвестиции в научные исследования и оснащение специализированных лабораторий, но и активное международное сотрудничество. Создание совместных научно-практических центров, обмен опытом с ведущими мировыми клиниками и исследовательскими институтами, а также обучение высококвалифицированных специалистов являются ключевыми факторами для успешного развития регенеративной кардиологии в регионе. В этом плане Узбекистан, как и многие развивающиеся страны, сталкивается с

необходимостью быстрого внедрения инноваций при ограниченных ресурсах, что подчеркивает важность стратегического планирования и целевых инвестиций. Отдельные инициативы, такие как увеличение количества публикаций в рецензируемых журналах, участие в международных консорциумах и разработка местных программ подготовки кадров, будут способствовать интеграции Узбекистана в мировое научное сообщество в области регенеративной медицины.

Заключение

Стволовые клетки, несомненно, обладают колоссальным потенциалом для трансформации кардиохирургии и лечения сердечно-сосудистых заболеваний. Прогресс в понимании биологии стволовых клеток и механизмов репарации миокарда открывает новые возможности для восстановления поврежденной сердечной ткани, а не просто замедления прогрессирования болезни. Несмотря на то, что большинство подходов все еще находятся на стадии клинических испытаний или ранних внедрений, результаты исследований демонстрируют безопасность и умеренную, но значимую эффективность клеточной терапии. Дальнейшие исследования должны быть сосредоточены на оптимизации протоколов, повышении выживаемости и функциональной интеграции трансплантированных клеток, а также на разработке более эффективных стратегий доставки. Интеграция клеточных технологий в кардиохирургическую практику требует не только научных прорывов, но и совершенствования регуляторной базы, а также создания необходимой инфраструктуры и подготовки кадров. В Узбекистане, как и во многих странах, развитие этого направления возможно лишь при условии активного международного сотрудничества и последовательного внедрения передовых научных достижений в клиническую практику, что в конечном итоге позволит предложить принципиально новые и более эффективные методы лечения пациентам с тяжелыми сердечно-сосудистыми заболеваниями.

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Problems And Solutions Of Teaching A Foreign Language To Under-Profit Students In Remote Areas

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Abstract
This article highlights the main problems faced by underprivileged students living in remote areas in learning a foreign language and the proposed solutions to eliminate them. The study provides an analysis based on practical examples, statistical data, and educational methods.
Keywords: foreign language, educational problems, remote areas, underprivileged students, educational opportunities, solutions.

Anontatsiya
Mazkur maqolada olis hududlarda yashovchi ka'm ta'minlangan o'quvchilarning chet tilini o'rganishda duch kelayotgan asosiy muammolari va ularni bartaraf etish bo'yicha taklif etilgan yechimlar yoritilgan. Tadqiqotda amaliy misollar, statistik ma'lumotlar va ta'limiy metodlar asosida tahlil berilgan.
Kalit so'zlar: chet tili, ta'lim muammolari, olis hudud, ka'm ta'minlangan o'quvchilar, ta'lim imkoniyati, yechimlar.

Bugungi kunda ingliz va chet tillarini mukammal o'rganish nafaqat shaxsiy taraqqiyot,balki yaxshi ta'lim olish va kelajakda yaxshi ish topishning asosiy kalitlaridan biri hisoblanadi.Shuningdek mamlakatimizning chekka hududlarida yashovchi ko'plab kam ta'minlangan oilalarining farzandlari uchun sifatli, arzon va qulay chet tili ta'limini olish juda qiyin.Sababi ,bunday joylarda malakali o'qtuvchilar yetishmaydi.Shuningdek, zamonaviy o'quv materiallari ,texnologik vositalar va qulay sharoitlar deyarli mavjud emas.Vaholanki,bu bolalar ham yurtimizning ertangi kelajagi ,ularning bilimili,chet tillarini yaxshi biladigan ,zamonaviy fikrlaydigan yosh avlod bo'lib ulg'ayishlari mamlakatimizning ertangi kelajagi uchun muhim.Shuning uchun ularga qulay va arzon,sifatli, eng asosiysi samarali o'quv usullarini eng olis hududlarda joriy qilish juda dolzarb masala hisoblanadi. Bu maqolada olis hududlarda kam ta'minlangan o'quvchilar uchun chet tilini qiziqarli va tushunarli tarzda o'rgatishning samarali yo'llari,oddiy materiallardan foydalanish bo'yicha tavsiyalar ,bepul onlayn resurslar va yangi pedagogik yondashuvlar haqida batafsil ma'lumot beriladi.Shuningdek olis hududlarda yashovchi kam ta'minlangan o'quvchilarning chet tilini o'rganishda uchraydigan asosiy muammolari,ularning sabablari hamda ularni bartaraf etish yo'llari yoritiladi.Mavjud shart-sharoitlar tahlil qilinib,amaliy tavsiyalar ilgari suriladi. Shuningdek ushbu yondashuvlar yordamida o'quvchilarning chet tiliga qiziqishini oshirish ularni dars jarayoniga faol jalb qilish va amaliy ko'nikmalarni shakllantirishning asosiy jihatlari ko'rib chiqiladi.

Chet tilini kam ta'minlangan bolalar uchun samarali va oson o'rganishga yordam beradigan asosiy vazifa-mavjud imkoniyatlardan to'liq foydalanib,bolalarni darsga qiziqtirishdir.Resurslar yetrali bo'lmasa ham ,qulay va ijodiy metodlar orqali sifatli ta'limni yo'lga qo'yish mumkin.Bunda Wendy A.Scott va Lisbeth H Ytrebergning "Teaching English to children" kitobidan tavsiya etilgan quyidagi

metodlar aynan kam sharotli o'quvchilar uchun juda mos keladi.

Birinchidan,o'yin asosida o'rganish nafaqat so'zlarni o'zlashtirishni tezlashtiradi,balki bolalar o'rtasida do'stlik,hamkorlik,guruh bo'lib ishlash kabi ijtimoiy ko'nikmalarni ham shakllantiradi.Masalan,Word Bingo kabi oddiy o'yinlarda bolalarda yangi so'zlarni eslab qolishga harakat qiladi.Ikkinchidan qo'shiqlar va she'rlar bolalar uchun o'rganish jarayonini ko'ngilochar qiladi.Ingliz tilidagi oddiy qo'shiqlar: "Head shoulders" , "Kness and toes " yoki "if you are happy and you know it" kabi qo'shiqlar harakatli ritmik bo'lib ,bolalarning so'z boyligini oshiradi, talaffuzini yaxshilaydi va darsga jonlilik olib kiradi.Uchinchidan, hikoya aytish (story telling)orqali bolalar so'zlarning ma'nosini tushunadi, eshitish va tushunish ko'nikmalari rivojlanadi.Eng muhimi, kam ta'minlangan sharoitda hech qanday maxsuz material talab etilmaydi. O'qtuvchi og'zaki oddiy hikoyalar aytib, bolalar bilan suhbat o'tkazishi mumkin .To'rtinchidan, harakatli faoliyatlar til o'rganishda bolani faollashtiradi ,shuningdek ,ularning tabiatiga mos: bolalar ko'proq o'yin va harakat orqali o'rganishni yaxshi ko'radi. Masalan, o'qtuvchi "Touch your nose", " Clab your hands "kabi buyruqlar orqali bolalarni harakatga keltiradi va shu orqali yangi fe'llarni oson o'rgatadi.Oddiy va aniq tilni ishlatish esa asosiy qoida : bolalarni qo'rqitadigan murakkab qoidalar o'rniga kundalik hayotda ishlatiladigan iboralar o'rgatilsa ular tezda muloqot qila boshlaydi .Va shuningdek Lynne Cameronning "Teaching Young Language Learners" kitobi ham yosh bolalarga chet tilini samarali o'rgatish bo'yicha juda mashhur manba yosh bolalar uchun tilning konteksdagi ma'nosi muhim.Cameron bolalar so'zlarni alohida o'rganishdan ko'ra ularni hikoya,o'yin yoki suhbat kontekstida tushunishi va qo'llashini ta'kidlaydi.Bu bolaga so'zning haqiqiy vaziyatda ishlatilishini osonlashtiradi.Lynee Cameron o'zining "Teaching Languages to Young Learns" asarida bolarning psixologik ijtimoiy va emotsional ehtiyojlarini chuqur tahlil qiladi. U til o'rganish jarayonini bolalar uchun qulay tushunarli va qiziqarli qilish kerakligini ta'kidlaydi. Bu ayniqsa olis hududlarda yashovchi moliyaviy jihatdan imkoniyati cheklangan o'quvchilar uchun juda muhim.Cameron metodikasi resurslar kam bo'lgan sharoitda ham ishlaydi.Masalan: o'yinlar, hikoyalar, harakatga asoslangan mashqlar va rasmli topshiriqlar orqali o'quvchilarning e'tiborini jalb qilish mumkin.Bu metodlar tilni dars emas ,balki o'yin yoki muloqot sifatida qabul qilishlariga yordam beradi.Aynan shunday yondashuv kam ta'minlangan bolarlarda chet tilini o'rganishga bo'lgan ishonch va motivatsiyani kuchaytiradi.Shuningdek, Cameronning tavsiyalarida o'qtuvchining hissiy qo'llab-quvvatlashi alohida o'rin tutadi.O'quvchi xatolardan qo'rqmasligi oz fikrini erkin ifodalashi va rag'batlanishi kerak.Bunday muhit, ayniqsa o'zini jamiyatda ikkinchi darajali deb hisoblaydigan bolalar uchun nihoyatda muhimdir. Shu bois,ushbu kitobdagi metodlar orqali o'qtuvchilar darsni mehrli interaktiv va samarali shaklda tashqil qilish mumkin.Chet tilini o'rganish imkoniyati har bir o'quvchu uchun teng bo'lishi kerak .Afsuski olis hududlardagi kam ta'minlangan oilalarning farzabndlari ko'pincha yaxshi ta'limdan chetda qolib ketmoqda .Bunday vaziyatda davlat tomonidan ijtimoiy yordam dasturlarini kuchaytirish, nodavlat tashkilotlar va ko'ngillarni jalb etish orqali bu tengsizlikni kamaytirish mumkin.Bugun hatto chekka hududlarda ham ko'pchikining qo'lida telefon bor. Shu telefonlar orqali quyidagi bepul mobil ilovalar hatto foyda keltiradi.Duolingo,Ling Q ,BBC Learning English ,You tobe kanallari (masalan, "Engkisg Addict", "Learn English Kids")

orqali o'quvchilar mustaqil til o'rganishlari mumkin.Mahalliy o'qtuvchilar ushbu ilovalarni dars jarayoniga integratsiya qilish orqali bolalar uchun darsni qiziqarli qiladi.Shuningdek, har bir hudud o'zining resurslariga ega .Masalan ,ko'ngilli talabalar va o'qtuvchilarni jalb qilish ,kutubxonada chet tilidagi burchak (book corner) tashkil etish o'quvchilarning ota-onalari yoko jamoa a'zolarini darslarga qiziqtirish ,bu orqali o'quvchilar uyda ham o'rganishni davom ettiradi.Shunindek UNESKO hisoboti ham shuni ko'rsatadiki ,dunyo bo'yicha millonlab bolalar hali ham sifatli ta'limdan bexabar bo'lmoqda .Ayniqsa, olis hududlarda yashovchi va kam ta'minlangan oilarning farzandlari uchun malakali o'qtuvchilarga ehtiyoj katta, bolalar orasida o'qishga rag'bat sust,til o'rganish imkoniyati past .UNESKO shuni tavsiya qiladiki interaktiv va inklyuziv ta'limga o'tish ,texnologik imkoniyatlarni kengaytirish va o'qtuvchilarni malakasini oshirish kerak.Mahalliy til va madaniyatni hisobga olish : chet tilini mahalliy kontekstda o'rgatish samaradorlikni oshiradi. "UNESKO"ning 2023-yilgi GLOBAL MONITORning report hisobotida ta'kidlanishicha ,olis hududlardagi bolalar ayniqsa ,kam ta'minlangan qatlam vakillari uchun chet tilini o'rganish imkoniyatlari juda cheklangan.Shuning uchun ta'lim tizimi zamonaviy qulay va teng imkoniyatli bo'lishi zarur.UNESKO hisobotidan shuni ko'rinadiki ,til o'rganish imkoniyatlari teng taqsimlanmagan.Shuning uchun davlat siyosati ta'lim muassalari va jamiyat birgalikda olis hududlardagi bolalarga zamonaviy ,texnologik va inklyuziv yondashuvlarni taqdim etish kerak.Aks holda ta'limdagi tengsizlik davom etadi kam ta'minlangan bolalar global raqobatga tayyor bo'lmay qoladilar .Ta'lim va innovatsiyalar jurnalining 2024-yildagi 3-sonida ham qishloq joylarda xorijiy tillarni o'qitishning dolzarb muammolari keng yoritilgan.Mazkur jurnalda O'zbekistonning qishloq hududlarida chet tilini o'rgatishdagi asosiy muammolar va ular uchun taklif etilgan amaliy yechimlar keng yoritilgan.Ayniqsa,kam ta'minlangan oilalar farzandlari uchun til o'rganish imkoniyatlari haqida chuqur tahlil berilgan.Ko'plab qishloq maktablarida darslar grammatikani yodlashga qaratilgan bo'lib,amaliy mashg'ulotlar deyarli mavjud emas.Bu esa o'quvchilarda tilni real hayotda qo'llash ko'nikmalarining shakllanmasligiga olib keladi.Shuningdek, chekka hududlarda til o'qtuvchilari ko'pincha to'liq malakaga ega emaslar yoki yangi metodlardan xabardor emaslar.Ba'zilar hatto chet tillarini o'zlari ham yetarli darajada bilmaydilar .O'qtuvchilar uchun har yili viloyat miqyosida til o'qtuvchilari uchun zamonaviy metodikalar uchun treninglar o'tkazilshi zarurligi aytiladi.Ayniqsa,CLIL (Content and Language Integrated Learning) va TPR (Total Physical Response)kabi metodikalar tavsiya etilad.CLIL metodikasi (Content and Language Integrated Learning) ya'ni mazmun va integratsiyalashgan o'qitish degani .CLIL bu bir vaqtning o'zida chet tilini va boshqa biror fanni (masalan,biologiya ,geografiya ,tarix) kabi fanlarni o'rgatish usulidir.CLIL metodining asosiy g'oyasi: O'quvchilar chet tilini alohida dars sifatida emas, balki boshqa fanlar orqali ham o'rganadi.Ya'ni ular fan mazmunini o'zlashtirayotib ,tilni ham o'rganishadi.Misol: ingliz tilida geografiya darsini o'tish – o'quvchi ingliz tilida "mountains","river","climate" kabi so'zlarni o'rganib geografik bilimlarni ham egallaydi.TPR (Total Physical Response) – bu metod jismoniy javob asosidagi metod.TPR – bu metod James Asher tomonidan ishlab chiqilgan bo'lib, til o'rganishda tana harakatlari orqali yangi so'z va iboralarni osonroq eslab qolishni ta'minlaydi.TPR metodining asosiy g'oyasi o'qtuvchi biror buyruq beradi, o'quvchilar esa bu buyruqni harakat orqali

bajaradi.Misol:O'qtuvchi "stand up","clab your hands ","jump","touch your nose " desa ,o'quvchi shu buyruqlarni bajaradi.Bu usul ayniqsa kichik yoshdagi o'quvchilar uchun juda samarali,chunki ular harakatni so'z bilan bog'lab o'rganadilar .Bu metod eslab qolishni va tushunishni osonlashtiradi. Bu metodlarning afzalligi ,tilni konteksda o'rganish va qiziqarli va interaktiv o'rganish. .Raqamli resurslar yaratish kerak .Mahsuz o'zbekcha interfeysli va qishloq bolalari uchun va moslashtirilgan chet tili o'rganish platformalarini ishlab chiqish lozimligi urg'ulanadi.Bu platformalar hatto internet bo'lmasa ham ishlay oladigan tarzda tuzilishi kerak.Til muhitini shakllantirish kerak o'quvchilarga sinfda va maktab atrofida inglizcha yozuvlar,lavhalar,plakatlar yaratish maktab ichida kichik,"English Corner" (Ingliz tili burchagi) tashkil qilish tavsiya etilgan.

Ta'lim va innovatsiyalar jurnalidago maqola asosida aytish mumkinki, chekka hududlardagi bolalar uchun chet tilini o'rganish imkoniyatlarini kengaytirish birgina dars soatlarining ko'pligi bilan emas ,balki sifatli o'qitish ,texnologiyalar bilan ta'minlash ,o'qituvchilar malakasini oshirish va motivatsion muhit yaratish bilan bog'liqdir.O'zbekiston Respublikasi Prezidentining 2022-yil 28-yanvardagi PF 60-sonli farmoni bilan tasdiqlangan "2022-2026 yillarga mo'ljallangan Yangi O'zbekistonning taraqqiyot strategiyasi "-mamlakatning har bir sohasini xususan ta'lim tizimini rivojlantirishga qaratilgan eng muhim hujjatlardan biridir. Mazkur strategiyaning bir nechta ustuvor yo'nalishlari ta'limdagi tengsizlikni kamaytirish chekka hududlarni qo'llab-quvvatlash va chet tillarini o'rganishga sharoit yaratish bilan bog'liq .Ayniqsa, kam ta'minlangan xizmatlarga teng kirish imkoniyatini yaratish dolzarb masala sifatida ko'rsatilgan.Hududlar o'rtasida ta'lim tafovuti bor. Strategiyada aynan qishloq va shahar maktablari o'rtasidagi farqni kamaytirish vazifasini belgilaydi. Bu holat ,til o'rganish imkoniyatlariga ham talluqlidir, chunki chet tillari ko'proq shaharlardagi maktablarda sifatli o'rgatilmoqda .Agar qishloq bolalari uchun teng imkoniyatlar yaratilmasa ta'limdagi tafovut chuqurlashib boraveradi. Bu esa nafaqat til o'rganish, balki ularning kelajakdagi hayot sifatig ham salbiy ta'sir ko'rsatadi.

Xulosa qilib aytganda ,mazkur maqoada ko'tarilgan masala olis hududlarda kam ta'minlangan bolalarga chet tillarini oson ,qulay,arzon va sifatli o'rgatishning yo'llari dolzarb va muhim hisoblanadi.Tadqiqot davomida ushbu muammoning asosiy sabablari, oqibatlari va uni hal etish yo'llari ko'rib chiqiladi .Amaliy tavsiyalar orqali mazkur sohada ijobiy o'zgarishlarga erishish mumkinligi ta'kidlanadi.Chet tilini o'rganish bugungi globallashuv davrida har bir shaxs uchun muhim ehtiyojga aylanmoqda.Til o'rganish nafaqat bilim va ko'nikmalarni rivojlantiradi, balki insonning dunyoqarashini kengaytiradi,o'ziga bo'lgan ishonchini oshiradi va xalqaro imkoniyatlar eshigini ochadi. Mazkur maqolada chet tlini o'rganishning ahamiyati, duch kelinadigan muammolar va ularni yengib o'tish yo'llari ko'rib chiqiladi.Shuningdek, til o'rganishda motivatsiya, samarali metodlar va atrof-muhitning o'rni alohida ta'kidlanadi.Xulosa qilib aytganda ,har qanday inson intilish, qat'iyat va to'g'ri yondashuv bilan chet tilini muvaffiqaytli o'zlashtirishi mumkin.

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A Comparative Study Of Figurative And Idiomatic Expressions In English And Uzbek: Insights Into Translation And Cross-Cultural Communication

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Abstract
This paper presents a comparative analysis of figurative and idiomatic expressions in English and Uzbek, highlighting their structural, semantic, and cultural characteristics. Drawing on 100 idioms and 50 figurative expressions from each language, the study explores how these expressions reflect cultural values, worldview, and social norms. Using qualitative methods and thematic categorization, it identifies both universal metaphorical concepts and culturally unique idioms that pose translation challenges. Findings reveal that while English idioms often rely on imaginative and metaphorical imagery, Uzbek expressions are deeply rooted in tradition, emotion, and moral values. Translation strategies such as cultural substitution and paraphrasing are frequently required to preserve meaning. The study underscores the importance of cultural competence in translation and language education, and calls for the inclusion of idiomatic language in bilingual teaching materials. The paper contributes to translation theory, cross-cultural linguistics, and applied language pedagogy.
Keywords: Idioms, figurative language, English, Uzbek, translation strategies, cultural equivalence, metaphor, cross-cultural communication, language learning, phraseology.

Introduction

Language is not merely a means of communication; it is a repository of culture, identity, and collective consciousness. Among the many elements that enrich a language, figurative and idiomatic expressions stand out as some of the most culturally embedded and linguistically challenging aspects. These expressions often transcend literal meanings to convey nuanced ideas, emotions, and values that are deeply rooted in the history, customs, and worldview of a particular linguistic community. In this regard, English and Uzbek—two languages stemming from entirely different linguistic families and cultural traditions—present an especially fascinating case for comparative analysis. While English belongs to the Germanic branch of the Indo-European language family and has been influenced by Latin, French, and Greek over centuries, Uzbek is a Turkic language with rich Persian, Arabic, and Russian influences. The contrast in linguistic evolution and sociocultural development between the two languages manifests prominently in their use of figurative language and idiomatic expressions.

Figurative language—such as metaphor, simile, hyperbole, and personification—is ubiquitous in everyday speech, literature, and media. Idiomatic expressions, on the other hand, are fixed combinations of words whose meaning is not deducible from the individual words themselves. For instance, an English speaker might say "kick the bucket" to mean "to die," while an Uzbek speaker might use the idiom “etagini bosmoq” (literally “to press one’s hem”) to convey jealousy or competition. These expressions often defy direct translation and pose significant challenges for learners, translators, and interpreters alike. In fact, idioms and figurative phrases are among the most difficult linguistic structures to translate accurately, primarily because they are heavily dependent on context, cultural references, and shared social experiences.

The increasing need for effective translation and cross-cultural communication in our globalized world necessitates a deeper understanding of how figurative and idiomatic expressions function in different languages. This comparative study of English and Uzbek idiomatic and figurative language aims to shed light on the similarities and differences in how these expressions are constructed, understood, and used in various contexts. It also seeks to explore the cognitive and cultural underpinnings that shape these linguistic phenomena, and how they reflect each culture's perception of the world. Moreover, the paper will highlight the implications of these differences for translation theory and practice, particularly in literary, pedagogical, and intercultural communication contexts.

This research is timely and relevant, as it contributes to both theoretical linguistics and practical translation studies. By examining the metaphorical mappings and idiomatic frameworks in English and Uzbek, we can gain insight into the conceptual structures underlying each language. This includes how abstract concepts are metaphorically linked to more concrete domains—such as using spatial metaphors to talk about emotions or power relations. For example, English frequently uses vertical metaphors to express status or mood ("feeling down," "rising to the occasion"), whereas Uzbek also uses vivid metaphors rooted in natural or bodily imagery. Additionally, the study provides valuable pedagogical insights for language learners and educators, especially in bilingual or multilingual environments where cross-linguistic interference may occur.

In sum, this paper aims to offer a comprehensive exploration of figurative and idiomatic expressions in English and Uzbek by employing a comparative, analytical approach. It will investigate key linguistic examples, draw on translation theory, and discuss the broader cultural contexts that shape meaning. The ultimate goal is to enhance understanding across cultures and to support more accurate, sensitive, and meaningful translation practices.

Literature Review

Recent scholarship on figurative and idiomatic expressions in English and Uzbek has expanded, particularly in the areas of comparative phraseology, metaphorical structure, translation strategies, and pragmatic usage. In a 2025 study by Shukurova, the author undertakes a comprehensive comparative analysis of tropes—metaphor, simile, metonymy, hyperbole, and synecdoche—between English and Uzbek, revealing both cross-linguistic universals and culturally specific variations shaped by each language's cognitive and cultural frameworks (Shukurova, 2025). This work underscores the role of figurative language as both a reflection of worldview and a mechanism for intercultural understanding.

Similarly, Erkinova (2025) provides an in-depth contrastive study of idiomatic expressions in both languages, demonstrating that while some idioms have rough equivalents, many remain unique to their cultural and historical contexts. The author discusses the structural and semantic properties of idioms and elucidates the translation challenges these pose (Erkinova, 2025). Complementing this, Pulatova (2024) offers a comparative investigation of idioms and phraseological units, considering definitions, usage, and cultural implications. She emphasizes the need for cultural competence in translators and language learners alike (Pulatova, 2024)

Furthermore, Otamuratova and Sodiqova (2025) explore the cultural dimensions of English idioms vis-à-vis Uzbek equivalents, focusing on domains such as family, nature, food, and emotion. Their findings highlight how idioms encapsulate social values and

traditions, and their discussion tackles the translator's dilemma of preserving cultural nuance while achieving intelligibility (Otamuratova & Sodiqova, 2025).

In addition to semantic-cultural analyses, researchers have also explored syntactic features. Maksudova (2024) examines idioms' internal syntax, comparing English's relatively flexible idiomatic structures with Uzbek's more rigid SOV word order. Her results suggest that syntactic constraints and idiomatic flexibility vary by language and influence translation strategies accordingly (Maksudova, 2024).

On the topic of metaphor and ecological imagery, Halimova and Musayeva (2025) adopt a cross-cultural metaphor analysis of proverbs and idioms related to natural elements like water, sky, and earth. They reveal both shared conceptual metaphors and unique culturally grounded variations in how environmental metaphors express moral and emotional states (Halimova & Musayeva, 2025).

Other studies (e.g. Inomjonova, 2024) discuss practical problems in translating idioms from English into Uzbek and propose strategies to preserve meaning and cultural relevance (Inomjonova, 2024). Additionally, Urolova (2024) examines pragmatic functions of idioms, such as politeness, humor, and persuasion, emphasizing cross-cultural differences in how idioms function within social contexts (Urolova, 2024).

Together, these recent works enrich the understanding of idiomatic and figurative language in English and Uzbek, offering a multifaceted perspective that encompasses linguistic structure, cultural embeddedness, pragmatic function, and translation methodology.

Methods

This study employs a qualitative comparative analysis approach to examine figurative and idiomatic expressions in English and Uzbek. A purposive sampling method was used to select 100 commonly used idioms and 50 figurative expressions from each language, sourced from dictionaries, literary texts, and online corpora. These expressions were analyzed based on semantic structure, cultural connotation, and syntactic form. To explore translation challenges, equivalents in both directions (English–Uzbek and Uzbek–English) were evaluated using back-translation techniques. Data were categorized into thematic domains such as emotions, nature, family, and social behavior. Additionally, interviews were conducted with five professional translators and five bilingual language educators to gain insights into practical translation strategies and intercultural interpretation. Thematic coding was used to identify patterns and recurring translation issues. This method enabled a culturally contextualized understanding of how idiomatic and figurative language functions across the two languages and highlighted implications for translation and language teaching.

Results

The comparative analysis of figurative and idiomatic expressions in English and Uzbek revealed both shared conceptual domains and significant cultural and structural differences. The study categorized the 100 idioms and 50 figurative expressions from each language into five primary thematic domains: emotions, nature, family, social behavior, and daily activities. These categories were used to identify similarities, differences, and potential translation challenges.

A detailed examination showed that both languages frequently employ metaphors and idioms rooted in bodily experiences and natural elements, which supports the theory of embodied cognition in metaphor (Lakoff & Johnson, 1980). However, the specific imagery and cultural associations varied

considerably. For example, the English idiom “to have butterflies in one’s stomach” (to feel nervous) does not have a direct equivalent in Uzbek; instead, an expression such as “ko‘ngli bezovta bo‘lish” (the heart is restless) is used. This reflects a broader trend in which English idioms often use imaginative, even whimsical metaphors, whereas Uzbek tends to rely on emotional or moral connotations linked to traditional values.

Table 1. The table below summarizes the number of idioms and expressions by thematic category in both languages:

Thematic Domain	English Idioms	Uzbek Idioms	Overlap or Approximate Equivalents
Emotions	25	20	12
Nature & Environment	15	18	8
Family & Relationships	20	25	10
Social Behavior	20	22	9
Daily Life	20	15	6
Total	100	100	45

The findings indicate that approximately 45% of the idioms had rough equivalents, meaning they could be translated with minimal semantic loss or cultural distortion. The remaining 55% either lacked a counterpart or required extensive cultural explanation or rephrasing to preserve meaning in translation.

In terms of figurative expressions, both English and Uzbek languages demonstrated creative use of metaphorical language, though again, the imagery was deeply influenced by culture. English figurative expressions often draw from animal behavior (“the lion’s share,” “as sly as a fox”), industrial or technical references (“pull the plug,” “gears turning”), and elements of colonial history. Uzbek expressions, on the other hand, were more deeply rooted in agrarian and familial imagery. For instance, “tuproqqa bosh qo‘yish” (to lay one’s head on the soil) poetically describes death, which reflects the importance of land and ancestry in Uzbek culture.

The second key result emerged from the syntactic comparison. English idioms typically allow more syntactic flexibility. For example, in the idiom “spill the beans,” one might vary the subject or tense without affecting meaning (“He spilled the beans,” “They’re spilling the beans”). In contrast, Uzbek idioms are more rigid in structure, and even minor alterations may distort or completely change the intended meaning. For instance, “etagini bosmoq” (to compete out of jealousy) cannot be freely inflected or rearranged without risking confusion or grammatical incorrectness. This rigidity increases the complexity for translators and non-native speakers trying to use such expressions accurately.

Interviews with professional translators revealed three key challenges in translating idioms from English to Uzbek and vice versa: (1) cultural unfamiliarity, (2) semantic loss during literal translation, and (3) difficulty finding functional equivalents. Translators reported that word-for-word translation often led to misunderstandings or humor loss, particularly in literary or informal contexts. For example, the English idiom “break a leg” (used to wish good luck) is completely unintelligible in Uzbek if translated literally, and would need to be replaced with something like “Omad tilayman!” (I wish you luck) for functional equivalence.

The results also showed that translators often employed one of three strategies: (1) direct translation (if an equivalent existed), (2) substitution with a culturally appropriate expression, or (3) paraphrasing. The choice depended on the genre and intended audience. In literary works, paraphrasing was common to preserve narrative flow and emotional impact. In news translation or educational contexts, substitutions were more frequent to maintain clarity.

Table 2. The table below highlights the preferred translation strategies observed in 50 idiomatic expressions:

Translation Strategy	Number of Cases	Example
Direct translation	18	"Blood is thicker than water" → "Qon suvdan quyuq"
Cultural substitution	15	"Hit the books" → "Kitobga bosh suqmoq" (insert head into book)
Paraphrasing	17	"Let the cat out of the bag" → "Sirni ochib qo'ymoq" (reveal a secret)

Lastly, the study revealed that certain cultural themes in Uzbek—such as respect for elders, familial obligation, and hospitality—are reflected more deeply in idiomatic expressions than in English. For example, idioms like "keksaning duosi yetaklaydi" (an elder's prayer leads the way) emphasize collective tradition and the moral authority of elders, which has no direct English equivalent. Conversely, English idioms more frequently reflect individualistic or self-reliant values, such as "pull yourself together" or "stand on your own two feet."

Overall, the results underscore that while figurative and idiomatic expressions serve similar communicative functions in both languages—such as adding color, conveying indirect meaning, and expressing emotions—the cultural and linguistic systems in which they operate can differ significantly. This has deep implications for translation studies, language pedagogy, and intercultural communication.

Discussion

The findings of this comparative study reveal the intricate and culturally embedded nature of figurative and idiomatic expressions in English and Uzbek, confirming that such expressions serve as both linguistic and cultural signifiers. The results demonstrate that while both languages use figurative language to express emotions, values, and social behaviors, the mechanisms and imagery they use differ greatly due to historical, social, and cognitive factors. These differences highlight the challenges involved in translating idiomatic expressions and metaphorical phrases, particularly when literal translation leads to semantic distortion or cultural misunderstanding.

One of the most notable observations from the analysis is the shared human experience reflected in idioms across both languages, such as metaphors related to family, emotions, and nature. These commonalities suggest the presence of universal conceptual metaphors, aligning with Lakoff and Johnson's (1980) theory of metaphor as a fundamental part of thought. However, despite these universals, many idiomatic expressions remain highly culture-specific. Uzbek idioms often reflect the agrarian lifestyle, moral teachings, and community-oriented values, while English idioms tend to reflect industrial development, individualism, and a Western orientation toward progress and self-expression.

The role of syntactic flexibility also emerged as a point of difference. English idioms tend to be syntactically pliable, allowing for varied subject-verb agreements and tense modifications without disrupting meaning. Uzbek idioms, in contrast, are more fixed and less tolerant of structural variation, which contributes to their semantic stability but reduces translation flexibility. This syntactic rigidity often forces translators to paraphrase or culturally adapt idioms rather than translate them directly.

Another critical point is the role of figurative language in language learning and cultural competence. For learners of English or Uzbek as a second language, idioms represent one of the most difficult linguistic features to master, not only because they

are structurally complex but also because their meanings cannot be inferred directly from the words themselves. Educators and textbook authors often omit idioms due to this complexity, which in turn reduces learners' exposure to authentic and culturally rich language. This study supports the argument that teaching idioms should be integrated into language instruction with cultural context and usage scenarios.

Furthermore, the interviews with professional translators affirmed that translation is not merely a linguistic task but a deeply cultural one. Their experiences confirmed the importance of cultural equivalence and communicative function over literal accuracy. These findings are consistent with functionalist approaches in translation theory, such as Skopos theory, which emphasizes purpose over word-for-word fidelity.

Overall, the discussion reveals that idiomatic and figurative language is a reflection of both shared cognition and distinct cultural identity. Effective translation and cross-cultural communication require not just linguistic knowledge but also an in-depth understanding of the values and social norms embedded in language.

Conclusion

This study has explored the similarities and differences between English and Uzbek idiomatic and figurative expressions, offering valuable insights into their linguistic structure, cultural significance, and translation challenges. Through a detailed comparative analysis, the research identified both universal and culture-specific aspects of idioms and metaphors. While themes such as emotions, nature, and social behavior are prevalent in both languages, the way these themes are expressed varies widely due to each culture's unique worldview, traditions, and historical context.

The study has shown that direct translation of idiomatic expressions often leads to semantic loss or cultural confusion. As such, translators must navigate between fidelity to the source language and clarity for the target audience, often resorting to substitution or paraphrasing to maintain the communicative intent. This aligns with modern translation theories that prioritize functional equivalence and audience reception over strict literalness.

Moreover, the research emphasizes the importance of teaching idiomatic and figurative expressions within language learning curricula. Exposure to such expressions not only improves language proficiency but also enhances learners' cross-cultural understanding. For both linguists and educators, understanding idioms is crucial to bridging gaps between languages and fostering mutual cultural respect.

In conclusion, figurative and idiomatic language serves as a mirror to a society's way of thinking, living, and communicating. By understanding how English and Uzbek encode experience through idioms and metaphors, translators, educators, and learners can move closer to achieving accurate, respectful, and culturally sensitive communication across languages. This study serves as a foundation for further research in bilingual lexicography, translation studies, and intercultural linguistics.

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Cross-Cultural Euphemistic Strategies In Political Discourse: A Comparative Linguopragmatic Analysis Of English And Uzbek Languages

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Abstract
This study explores euphemistic strategies in English and Uzbek political speeches, focusing on their linguopragmatic functions within distinct cultural and typological contexts. It examines how euphemisms, as strategic and ideological tools, shape political discourse, mitigate sensitive topics, and reflect broader socio-cultural values. Drawing on politeness theory, cognitive linguistics, and discourse analysis, the research compares the forms and functions of euphemisms in both languages, highlighting their role in political manipulation, public perception management, and ideological framing. The findings reveal how linguistic and cultural factors influence euphemistic expression and its impact on political communication.
Keywords: Euphemism, political discourse, English, Uzbek, linguopragmatics, politeness theory, cognitive linguistics, discourse analysis, cross-cultural communication, ideological framing.

Introduction

In political communication, euphemisms play a crucial role in addressing delicate, controversial, or potentially face-threatening subjects. Politicians often use these indirect expressions to soften unpleasant truths, veil contentious messages, and frame controversial policies or actions in a more agreeable light. Far from being mere stylistic flourishes, euphemisms are tightly woven into the strategic and ideological fabric of political discourse. They reveal both the intentions of the speaker and the wider cultural, political, and communicative contexts in which they are used.

This research explores how euphemistic language is employed in political speeches in two linguistically and culturally different contexts: English and Uzbek. English, a globally dominant Indo-European language, often utilizes abstract, bureaucratic euphemisms that convey formality and help obscure personal accountability. In contrast, Uzbek—a Turkic language shaped by collectivist values and high-context communication—frequently uses culturally meaningful and metaphorical euphemisms that emphasize respect, unity, and social order.

The central focus of this study is to compare how euphemisms function in English and Uzbek political rhetoric from a linguopragmatic perspective. It examines how structural features of each language, cultural expectations, and pragmatic goals shape the selection and use of euphemistic expressions. The analysis is grounded in theoretical approaches such as politeness theory, cognitive linguistics, and discourse analysis to uncover how euphemisms influence public opinion and help shape political messaging.

Considering that political speech is a powerful instrument for shaping public attitudes and advancing ideological agendas, understanding euphemistic strategies sheds light on the hidden mechanisms of influence, persuasion, and cultural conditioning. This comparative inquiry contributes to a broader appreciation of how language serves as a tool for exercising authority, managing

diplomatic relationships, and maintaining social order in different cultural settings.

Literature Review

The study of euphemisms has long been of interest to linguists due to their important role in navigating socially delicate or taboo topics. Euphemisms function as pragmatic tools that allow speakers to express themselves more tactfully, often reducing the impact of language that might otherwise be perceived as blunt or offensive. Allan and Burridge (1991) underscore the importance of euphemistic language in sustaining polite interaction by diminishing the severity of potentially face-threatening remarks. These expressions, grounded in the framework of politeness theory (Brown & Levinson, 1987), serve not only to maintain social decorum but also to subtly steer audience perception in strategic ways. Nowhere is this more evident than in political language, where word choice becomes a mechanism of persuasion, ideological framing, and influence.

Political discourse, by nature, demands a high degree of rhetorical management. As Chilton (2004) observes, politicians often rely on euphemistic phrasing to recast controversial measures in more favorable terms, engaging in both linguistic camouflage and conceptual reframing. Fairclough (2006) expands on this by suggesting that euphemism operates as a form of discourse control—one that reinforces authority and shields political actors from dissent. By softening contentious realities, such language creates a protective layer between the speaker and the audience, maintaining political legitimacy and helping to preserve social order.

Within English-language political rhetoric, euphemisms have been widely analyzed and critiqued. Scholars such as Lakoff (1973) have argued that these expressions function as "moral filters"—linguistic constructs that help reframe harsh realities. Terms like *"collateral damage"* to refer to civilian deaths, or *"enhanced interrogation techniques"* in place of torture, illustrate how bureaucratic jargon can obscure the moral weight of policy decisions. These sanitized terms repackage disturbing actions in emotionally neutral language, which not only shapes public perception but also helps normalize controversial practices. Euphemisms in English political speech are thus employed as sophisticated rhetorical devices that aid in minimizing criticism and consolidating support.

From a structural perspective, English euphemisms often rely on grammatical constructions such as nominalization, passive voice, and specialized or vague vocabulary. Phrases like *"mistakes were made"* serve to diffuse responsibility by omitting any clear agent. This tendency toward abstraction is consistent with the legalistic and individual-centered nature of political discourse in English-speaking societies, where accountability can hinge on subtle linguistic choices.

In contrast, euphemistic strategies in Uzbek reflect the values of a high-context, collectivist culture. Uzbek political language tends to emphasize indirectness, communal values, and deference to hierarchy. Rather than inventing technical terms or drawing on bureaucratic abstraction, Uzbek euphemisms often derive from idiomatic expressions or culturally resonant metaphors. These are rooted in traditional worldviews and shared societal norms. For instance, a term like *"qiyin davr"* (a difficult period) may be used in place of a direct reference to economic hardship. The phrase softens the message while also inviting empathy and national solidarity. In similar fashion, topics such as unemployment or political dissent are approached through euphemistic language that avoids confrontation and maintains group cohesion.

Scholars such as Crespo-Fernández (2007) have emphasized that euphemistic usage is shaped by the broader cultural and communicative conventions of each society. What functions as a rhetorical strategy in Western political debates may, in Central Asian contexts, be closely tied to social etiquette, relational harmony, and traditional expectations. Kussmaul (1997) highlights how these cultural differences create challenges in translation, noting that in many cases, conveying the underlying meaning of a euphemism requires more than just linguistic equivalence—it demands cultural adaptation.

Although there has been extensive inquiry into political euphemism in English, research on its use in Uzbek remains relatively sparse. Moreover, very few studies have engaged in a side-by-side comparison of euphemistic strategies across languages with distinct typologies and cultural backdrops, such as English and Uzbek. While both languages employ euphemism to avoid directness and manage social dynamics, the motivations and mechanisms behind these choices are often quite different. With political messages now circulating widely in a globalized media environment, understanding these cross-cultural distinctions becomes increasingly important.

Another limitation in the existing literature is methodological. Much of the current research is limited to textual analysis and lacks insight into real-time speech contexts or the perspectives of native language users. Because euphemisms often depend on contextual cues—such as tone, setting, and shared cultural references—their interpretation cannot be fully understood through text alone. The pragmatic dimension, which includes how meaning is negotiated in interaction, is essential for a comprehensive analysis.

Furthermore, while numerous comparative studies focus on widely spoken world languages—such as Chinese, Arabic, or Russian—Turkic languages like Uzbek remain underrepresented in discourse analysis. Considering Uzbekistan's growing role on the international stage and evolving internal political dynamics, exploring how euphemistic language is employed in Uzbek political speech is both timely and necessary. It offers valuable insight not only for linguistic theory but also for understanding political messaging in non-Western societies.

To address these gaps, this study sets out to conduct a comparative linguopragmatic analysis of euphemisms in English and Uzbek political discourse. It seeks to explore the ways in which euphemistic expressions reflect and reproduce cultural values, communicative norms, and ideological orientations in each language. Through this comparative lens, the study aims to contribute to broader discussions in political linguistics, intercultural communication, and discourse studies.

In conclusion, although euphemisms have been extensively analyzed in Western political contexts, there remains a pressing need for research that brings non-Western languages like Uzbek into the conversation. By investigating the unique and overlapping functions of euphemistic language in English and Uzbek political rhetoric, this study aims to enrich our understanding of how language operates as a tool of diplomacy, power, and cultural expression across linguistic and national boundaries.

Methodology

This research employs a qualitative and comparative linguopragmatic approach, aiming to explore the structural, functional, and contextual use of euphemisms in political rhetoric across two linguistically and culturally divergent languages: English and Uzbek. At its core, this study treats euphemisms not merely as lexical

alternatives but as expressions deeply shaped by the social norms and pragmatic systems of their respective speech communities. The methodology was thus designed to go beyond surface-level comparisons and uncover the underlying cultural and communicative ideologies influencing euphemistic language use in political discourse.

1. Research Approach and Justification

The chosen methodology centers on a cross-linguistic, pragmatically oriented comparison, which enables the researcher to analyze how different linguistic communities address sensitive issues through indirect forms of expression. By comparing euphemistic strategies in English and Uzbek political speech, this study highlights both convergences and divergences in linguistic structure and pragmatic intent. The linguopragmatic framework allows for examination of not only how euphemisms are formed and used, but also why they are chosen in particular contexts, reflecting the idea of language as a functional tool within specific cultural settings.

This research is firmly grounded in a qualitative paradigm, which supports a detailed and interpretative examination of meaning and speaker intention. Unlike quantitative models that might focus on frequency counts or lexical trends, this study prioritizes depth of analysis, paying close attention to the communicative goals and cultural subtleties embedded in euphemistic expressions.

2. Data Collection Procedures

2.1. Speech Corpus Compilation

A curated dataset of 50 political speeches was assembled—25 from English-speaking political figures and 25 from Uzbek officials. These speeches were sourced from high-authority political and governmental channels to ensure reliability and representativeness.

- *English-language corpus*: Includes speeches from figures such as U.S. Presidents, Secretaries of State, U.K. Prime Ministers, and Cabinet members. These encompass public addresses like inaugural speeches, policy declarations, crisis statements, and legislative debates. Sources include government platforms (e.g., whitehouse.gov, gov.uk), international media outlets, and public archives such as the American Presidency Project.
- *Uzbek-language corpus*: Includes public addresses by the President of Uzbekistan and leading officials in sectors such as education, economics, and foreign affairs. These texts were gathered from official portals including president.uz, various ministry websites, and national news agencies like UzA and Dunyo.

The selected speeches span from 2015 to 2023, a period marked by significant global and national developments. Events such as the COVID-19 pandemic, international conflicts, governmental transitions, and major economic reforms provided rich contexts in which euphemistic language was frequently employed.

2.2. Inclusion Parameters

To maintain consistency and relevance across the corpus, the following selection criteria were applied:

- Speeches had to be publicly delivered and officially documented.
- Content must involve politically or socially sensitive issues such as economic challenges, civil unrest, military operations, diplomatic controversies, or public policy failures.
- Original delivery had to be in the speaker's native language, or a professionally verified translation had to be available.
- A complete and accurate transcript or official written version had to be accessible.

3. Analytical Model

The analysis unfolded in three key stages, each examining different aspects of

euphemistic usage: linguistic construction, pragmatic function, and cultural context.

3.1. Euphemism Detection

Euphemistic expressions were identified using a context-sensitive, semantic-substitution method. Speeches were carefully examined for instances where softer or indirect language was used in place of potentially confrontational or offensive terms. Common indicators included:

- **Semantic shifts**: figurative or metaphorical expressions replacing direct references.
- **Syntactic strategies**: passive constructions or nominal forms that obscure agency or responsibility.
- **Pragmatic softening**: vague or emotionally neutral wording for controversial issues.

For instance, terms like "operational misstep" in English were marked as euphemisms for "military failure," while phrases such as *"muammo yo'q, faqat vaqtinchalik qiyinchilik"* ("no problem, only a temporary difficulty") in Uzbek were interpreted as indirect references to crises or institutional shortcomings.

3.2. Functional Categorization

Once identified, euphemisms were classified according to their communicative role. These functions were drawn from established theories of pragmatics and discourse, including:

- *Face-saving politeness* (Brown & Levinson, 1987)
- *Ideological framing and soft power* (Fairclough, 2006; Chilton, 2004)
- *Avoidance of taboo subjects* (Allan & Burridge, 1991)
- *Intentional misdirection or obfuscation* (Lakoff, 1973; Crespo-Fernández, 2007)

Many euphemisms served multiple functions simultaneously. In such cases, a primary and secondary role were noted based on contextual cues and likely audience interpretations.

3.3. Structural and Linguistic Analysis

To further understand how euphemisms are constructed, the expressions were examined from a linguistic standpoint, focusing on:

- **Word formation**: compounding, affixation, or lexical blending.
- **Syntax**: modal verbs, impersonal phrases, passive voice.
- **Vocabulary choices**: borrowed terms, abstract nouns, culturally loaded metaphors.

Structural comparisons revealed significant contrasts: English euphemisms often leaned toward bureaucratic terminology and formal abstraction, whereas Uzbek examples frequently drew on traditional sayings, proverbs, or metaphorical speech closely tied to cultural narratives.

4. Cultural Validation Through Informants

To ensure culturally grounded interpretation, the study included insights from native speakers familiar with political discourse in each language. Informants met the following criteria:

- Native fluency in English or Uzbek.
- Professional or academic expertise in linguistics, translation, or political communication.
- Awareness of their country's sociopolitical context and rhetorical styles.

Selected excerpts were shared with these informants, who were then asked to explain their understanding of specific euphemistic phrases. Their feedback was critical in confirming the connotative and ideological meanings of expressions, and it provided a check against potential misreadings by the researcher. Discrepancies in interpretation were recorded and analyzed for cross-cultural significance.

5. Ethical Protocol

This study posed minimal ethical concerns, as it utilized publicly available texts and voluntary, anonymized feedback from adult participants. All informants were briefed on the project's objectives and gave verbal

consent to use their responses anonymously. No identifying information was collected.

6. Methodological Constraints

While this research offers a rich, interpretative approach to political euphemism, several limitations must be acknowledged:

- Subjectivity in qualitative analysis, though reduced by informant validation, cannot be entirely eliminated.
- The limited sample size does not permit broad generalizations across all forms of political discourse.
- The study focuses exclusively on euphemistic usage, excluding related forms such as metaphor, irony, or dysphemism that may also be important in political language.

Nonetheless, the selected methodology provides a strong foundation for uncovering the nuanced, culturally situated roles that euphemisms play in political speech. By combining linguistic analysis, pragmatic interpretation, and cross-cultural input, this study aims to offer a well-rounded view of how indirect language shapes political communication in English and Uzbek.

Results

The comparative analysis of euphemistic expressions in political discourse across English and Uzbek reveals distinct differences in how each language employs such strategies. These differences span not only frequency and structure but also cultural intention and audience reception. Drawing on the examination of 50 political speeches—25 from each linguistic context—the findings are organized into four key areas: frequency and concentration, communicative functions, structural characteristics, and public interpretation. This section outlines how euphemism serves as a culturally grounded linguistic resource in political messaging.

1. Frequency and Concentration of Euphemisms

A noticeable variation was observed in how often euphemisms appeared in political speeches across the two languages. English-language speeches, particularly from U.S. and U.K. officials addressing topics such as foreign intervention, defense policy, and internal governance issues, showed a high density of euphemistic language. These speeches frequently included expressions designed to soften or obscure controversial actions—phrases like *"kinetic military action"*, *"collateral damage"*, or *"enhanced interrogation"* appeared repeatedly in discussions about military operations and security matters.

This tendency reflects a broader strategic use of euphemism in English-speaking political environments, where the aim is often to reduce emotional response or public backlash by reframing uncomfortable truths.

By contrast, Uzbek political speeches made less frequent use of euphemisms, but those that were used tended to be deeply rooted in the cultural and social fabric of the language. Topics such as economic challenges, healthcare, or labor concerns were often addressed using more implicit and culturally resonant language. For instance, rather than referring to a crisis directly, phrases like *"qiyin davr"* (a difficult time) were used, offering a less alarming framing. Similarly, terms like *"yangilanish jarayoni"* (renewal process) substituted more formal or harsh terms like *"islohot"* (reform), thus presenting political shifts in a more positive or hopeful light.

These patterns suggest that English speakers use euphemism as a rhetorical tool in adversarial or accountability-laden environments, while Uzbek speakers deploy it to maintain collective harmony and align with shared values.

2. Communicative Roles of Euphemisms

A core objective of this study was to identify how euphemisms function pragmatically in each linguistic and political context. Although both English and Uzbek speeches use euphemisms to handle sensitive content, their communicative goals diverge. In English discourse, euphemistic language often:

- Deflects blame or responsibility.
- Reframes unfavorable outcomes using softer or vaguer terminology.
- Supports political agendas by controlling public interpretation.

For instance, terms like *"budgetary adjustment"* were frequently used instead of more direct expressions like *"budget cuts"*, thereby reducing perceived harm or accountability. These euphemisms often function in line with Grice's conversational maxims, subtly violating expectations of clarity for strategic effect.

Uzbek political speeches, on the other hand, employed euphemisms primarily to:

- Uphold social dignity and avoid direct criticism.
- Reinforce cultural values, respect for hierarchy, and emotional stability.
- Present political messages within familiar, morally grounded frameworks.

Phrases rooted in kinship, patience, or national duty—such as *"sabr-toqat davri"* (a time for patience)—were used instead of direct references to mismanagement or hardship. This indicates that in Uzbek rhetoric, euphemisms are more about preserving harmony and less about manipulating perception.

While both systems show elements of image management, English euphemisms tend to be more explicitly strategic, whereas Uzbek euphemisms operate within an implicitly respectful and culturally conditioned framework.

3. Linguistic Structures and Expression Types

The structural makeup of euphemisms also differed significantly between the two languages. In English, euphemistic expressions often featured:

- **Nominalizations** that obscure responsibility (e.g., *"downsizing"*).
- **Passive voice constructions** that mask agency (e.g., *"errors were made"*).
- **Invented or redefined terminology** to introduce ambiguity or reduce emotional intensity (e.g., *"nontraditional engagement"*).

These constructions contribute to a formal, bureaucratic tone and often serve to distance the speaker from the consequences of their message.

Uzbek euphemisms, by contrast, displayed:

- **Metaphorical and idiomatic expressions**, often rooted in folklore or shared cultural concepts.
- **References to religious or moral principles**, invoking ideas of fate, divine will, or ancestral wisdom.
- **Proverbial language**, such as *"Har bir ishda bir xayr bor"* ("There is good in every hardship"), to reframe adversity positively.

These stylistic tendencies reflect Uzbek's high-context communication style, where meaning is often implied rather than overt, and social values are prioritized over blunt expression. Rather than depersonalizing content, Uzbek euphemisms build emotional resonance and solidarity.

4. Public Interpretation and Reception

Native speaker feedback provided essential insight into how euphemistic language is received within each culture. English-speaking informants, particularly those attuned to political rhetoric, generally viewed euphemisms with suspicion. They perceived such language as evasive or intentionally misleading, citing examples like *"alternative facts"* as emblematic of manipulative spin. Overuse of euphemism, they suggested, could result in public cynicism and loss of trust.

In contrast, Uzbek-speaking informants expressed a more favorable view. Many saw euphemistic speech as appropriate

and respectful, particularly in contexts where direct language might cause embarrassment or social unrest. While a few acknowledged that euphemisms could obscure accountability, most emphasized their cultural necessity and the comfort they provide in maintaining respectful discourse. This divergence highlights differing expectations around political communication: English-speaking audiences often prioritize transparency and directness, while Uzbek-speaking audiences place value on courtesy, restraint, and communal harmony.

Key Takeaways:

- **English political euphemisms** are used frequently and tend to obscure or soften controversial messages through abstract, bureaucratic language.
- **Uzbek euphemisms** appear less often but are deeply embedded in traditional, metaphorical, and emotionally resonant forms.
- Structural choices reflect differing communicative aims: English favors detachment and ambiguity, while Uzbek leans toward unity and moral framing.
- Audience attitudes toward euphemism differ significantly—critical and skeptical in English contexts, accepting and culturally aligned in Uzbek settings.
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Discussion

This study provides significant insights into how euphemistic language is employed in political contexts within two distinct linguistic and cultural frameworks: English and Uzbek. The findings indicate that euphemisms are shaped not only by the structural features of each language but also by sociocultural norms and political traditions. Rather than serving a uniform purpose, euphemisms vary in their form, function, and audience reception based on broader ideological and communicative factors. This section discusses the broader implications of these results, draws connections to existing academic discourse, and proposes directions for future research and practical applications.

1. Cultural Significance of Euphemistic Language

The study illustrates that euphemism is deeply rooted in the communicative traditions and cultural values of a society. While politicians in both English- and Uzbek-speaking settings utilize euphemisms as rhetorical tools, the intentions and mechanisms behind their use differ notably.

In English-speaking political contexts, euphemisms often reflect a preference for formal detachment and strategic ambiguity. Phrases like *"enhanced interrogation"* or *"collateral damage"* do more than replace harsher terms; they recast problematic realities in less emotionally charged and more institutionally acceptable language. These findings align with the work of scholars such as Chilton (2004) and Fairclough (2006), who argue that political language in English-speaking cultures frequently serves to obscure truth and shape public opinion.

In contrast, euphemisms in Uzbek political speech are more reflective of a collectivist and high-context culture, where implicit meaning and shared cultural references play a central role. Expressions such as *"qiyin davr"* (difficult time) emphasize resilience and national solidarity rather than denial or distortion. Unlike their English counterparts, Uzbek euphemisms are generally not used to mislead, but rather to maintain social balance and cultural decorum.

2. Structural Influence of Language Type

The differences observed in the structural design of euphemistic expressions can be linked to the typological features of each language. In English, euphemisms frequently appear as nominalizations, passive constructions, or abstract

formulations, often resulting in language that conceals agency and responsibility. These forms contribute to a bureaucratic tone that helps speakers distance themselves from potentially damaging actions or outcomes.

By contrast, Uzbek euphemisms are often metaphorical or idiomatic and deeply tied to religious and cultural imagery. Uzbek, being an agglutinative language, facilitates rich and expressive phrasing that enhances emotional resonance. This stylistic preference supports the broader communicative goals of preserving unity, respect, and optimism in the face of political or social challenges.

These observations confirm that euphemism functions not just as a linguistic substitute, but as a culturally embedded practice shaped by both grammatical structure and social convention. Understanding these nuances requires a linguopragmatic approach that takes into account both form and context.

3. Ideological Role in Shaping Political Narratives

Euphemisms in both English and Uzbek political discourse serve important ideological purposes, albeit in different ways. In English-speaking environments, euphemisms often serve to mask unpleasant realities or reframe controversial policies in more favorable terms. Terms like *"conflict"* instead of *"war"*, or *"revenue enhancements"* instead of *"tax increases"*, are used to soften the political and ethical implications of policy decisions.

In the Uzbek context, while euphemisms also frame political narratives, they do so by invoking moral and cultural values. Rather than concealing the truth, these euphemisms tend to portray difficulties as shared challenges that can be overcome through patience and unity. The rhetorical strategy is not about denial but about mobilizing collective strength and maintaining morale.

Thus, while both systems use euphemism to influence public perception, their objectives diverge. English euphemisms often manage dissent and legal scrutiny, whereas Uzbek euphemisms reinforce societal cohesion and shared responsibility.

4. Public Attitudes Toward Euphemistic Language

Audience reaction to euphemistic usage is another key area of divergence between the two languages. Informants from English-speaking countries expressed a general mistrust toward political euphemisms, viewing them as tools for deception or spin. This aligns with a cultural emphasis on transparency and directness, particularly in democratic societies with strong media oversight.

Uzbek informants, however, typically interpreted euphemistic expressions as polite and appropriate for public discourse. The use of softened language was seen as a way to show respect, avoid social conflict, and uphold national values. While some acknowledged the potential for vagueness, most respondents considered euphemisms to be a culturally valid means of communication.

These differences reveal how audience expectations and interpretive norms play a crucial role in the success or failure of euphemistic messaging. What might seem dishonest in one culture may be perceived as respectful or even reassuring in another.

5. Implications for Cross-Cultural Interaction

The study's results have broader implications for international communication and translation. Euphemisms are highly context-sensitive, and their meanings can become distorted when transferred across cultures without adequate interpretation. For diplomats, journalists, and interpreters, it is essential to understand not just what euphemisms mean, but how they function within specific cultural frameworks.

This has practical consequences for international relations. For instance, Western media may interpret Uzbek political euphemism as lacking transparency, while Uzbek listeners might find Western political language overly blunt or insensitive. Increasing awareness of these differing rhetorical norms can improve mutual understanding and reduce miscommunication in diplomatic and media settings.

6. Educational Relevance and Application

These findings also carry valuable implications for education, especially in areas such as critical media literacy, intercultural communication, and language instruction. As individuals are exposed to political messaging through various media channels, the ability to detect and interpret euphemisms becomes increasingly important.

Educators can integrate euphemism analysis into curricula to help students develop critical thinking skills and better understand how language influences perception. In language education, especially in English as a Foreign Language (EFL) or Uzbek language programs, teaching euphemisms can enhance cultural competence and deepen learners' understanding of how rhetoric operates in different societal settings.

7. Opportunities for Future Research

While this study has provided a focused comparison between English and Uzbek political discourse, it opens the door to broader investigations. Future studies might expand this research to include other Turkic or Slavic languages, examining whether similar euphemistic patterns exist and how they vary across political or historical contexts.

Another promising direction involves examining how euphemisms evolve over time, especially during periods of political upheaval or social change. A diachronic analysis could reveal how euphemistic strategies adapt to shifting ideological climates.

In addition, quantitative tools such as corpus linguistics or sentiment analysis could complement qualitative observations. By combining frequency data with discourse interpretation, researchers could gain a more comprehensive view of how euphemism shapes and reflects political communication.

Conclusion

In conclusion, this research underscores the significance of euphemistic strategies as more than just stylistic choices—they are integral to how language constructs and mediates political meaning. Euphemisms in English often prioritize depersonalization and institutional rhetoric, while in Uzbek, they emphasize collective identity and moral unity.

Viewing political euphemism through a linguopragmatic lens reveals how these expressions are shaped by the interplay of grammar, culture, and ideology. As global political communication continues to evolve, especially in multilingual and multicultural contexts, understanding these dynamics will remain vital for scholars, educators, and communicators committed to fostering transparency and intercultural understanding.

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The Role And Importance Of Act In Teaching Students To Written In The Elementary Grades

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Abstract
This article analyzes the role and importance of information and communication technologies (ICT) in teaching students to write in primary schools. The research examines the role of ICT tools in improving the quality of education, the effectiveness of ICT tools in developing students' writing skills, and the attitude of teachers and students to technology. The article also provides recommendations for the successful introduction of ICT tools into the educational process.
Keywords: Primary schools, teaching writing, information and communication technologies, ICT, innovations in education, interactive education, students' writing skills, quality of education, teacher qualifications, educational technologies.

Introduction

Today, the role of information and communication technologies (ICT) in the education system is increasingly increasing. The use of modern technologies in teaching any subject or skill is of great importance in making the educational process effective, interactive, and interesting. Especially in primary grades, when children first come to school and learn to read and write, the use of ICT facilitates their learning process and increases the quality of their learning. Learning to write is the foundation for children to understand their native language more deeply, express their thoughts correctly, and express their ideas in written form. Therefore, the use of innovative methods in teaching writing, in particular, the effective use of ICT tools, is an important task. Through information and communication technologies, students not only learn to write letters correctly, but also their attention becomes more active, and their interest in learning increases. Nowadays, schools have interactive whiteboards, computer programs, special mobile applications, and many other technological tools. With the help of these tools, lessons are more diverse and effective, and students have more opportunities to strengthen their writing. Therefore, an in-depth study of the role and importance of ICT in teaching writing in primary grades and its full implementation in the educational process is one of the priority tasks of today's education system.

The aim was to determine the role and importance of information and communication technologies in teaching writing to students in primary grades. Various methods and tools were used in the research process, which allowed for a more in-depth analysis of the effectiveness of ICT in the formation and development of students' writing skills.

First of all, the existing scientific literature and practical experience in the field of education were studied. Through this, information was collected about the interaction of traditional methods and modern technologies used in teaching writing in primary grades. In the practical part of the research, experimental work was organized on the introduction of information and communication tools into the educational process.

The experiment widely used interactive whiteboards, multimedia programs, computer and tablet applications developed for special writing exercises. Students' writing skills were regularly monitored, and their writing errors, difficulties in forming letters, and their ability to spell words correctly were analyzed. Students'

motivation and interest in the lesson were also studied, which helped to determine the positive impact of technology on learning.

The study also took into account the teachers' opinions and methodological approaches. Through interviews and questionnaires with them, the contribution of ICT tools to the teaching process, as well as the difficulties encountered and methods for overcoming them, was studied. The individual characteristics of students and their attitude to technology were also taken into account. Lesson materials and exercises were presented in a personalized manner so that each student could learn at his or her own pace. As a result, based on the data and observations collected during the study, effective ICT methods and techniques for teaching writing in primary grades were identified, and practical recommendations for their implementation in the educational process were developed. This methodology serves to improve the quality of the educational process, develop students' writing skills, and introduce innovative approaches in the education system.

The use of information and communication technologies in teaching students to write makes a significant contribution to improving the quality of education. The results of the study showed that ICT tools effectively help students develop writing skills, as they make lessons more interactive and interesting. Students accelerate the mastery of letters and words through interactive exercises and games, which increases their interest in writing. At the same time, technologies develop students' independent work skills. Each child can practice writing at their own pace, which increases their self-confidence and allows them to quickly correct mistakes. This is especially important in primary grades, since the process of learning to write is individual and different for each child. However, there are also some problems associated with the introduction of ICT into the educational process. In some schools, the lack of technological equipment or the low qualifications of teachers who can use them can reduce efficiency. Therefore, it is necessary to train teachers in the effective use of ICT tools, and organize special training for them. In addition, the issues of directing students' attention and maintaining discipline in the process of using technologies are also important. Another important aspect is that when teaching with the help of technologies, students' creative thinking and communication skills are also developed. Information and communication tools encourage students to independently search for new knowledge, freely express their thoughts, which prepares them for successful adaptation to modern society. At the same time, traditional methods should not be completely abandoned. Carrying out traditional writing exercises and lessons together with ICT tools ensures the harmony of the educational process. In order to fully and thoroughly form students' writing skills, it is best to use both approaches in harmony. In conclusion, it was found that the role of ICT in teaching writing in primary grades is significant and effective. However, in order to get the maximum benefit from these technologies, it is necessary to improve the skills of teachers, improve equipment, and carefully plan the educational process. In this case, ICT can become an important tool in improving the quality of education, facilitating the learning process for students, and preparing them for future stages of education.

Conclusion

Research and practical experience show that ICT tools can greatly help make lessons interactive, interesting and effective. They serve not only as a guide in developing students' writing skills, but also as a tool for independent learning. The fact

that each student can practice at his own pace, identify and correct his mistakes with the help of ICT makes the process of learning to write easier and more effective. At the same time, technologies also help students develop their communication, creative thinking and independent learning skills. However, for the effective use of technologies, it is necessary to improve the skills of teachers, provide them with modern equipment and carefully plan the educational process. Combining ICT with traditional methods will further improve the quality of education.

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Abdulla Qodiriy – A Master Of Words

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Abstract
This article explores the satirical mastery of Abdulla Qodiriy, one of the pioneers of Uzbek prose and a distinguished literary figure. It analyzes Qodiriy's use of language, his precision in word choice, and the unique role of satire in his literary works, especially during the 1920s. Special attention is given to his satirical stories such as "From the Diary of Kalvak Mahzum" and "What Does the Irritable Toshpolat Say?", which reflect the social contradictions and absurdities of the time through humor, irony, and criticism. The study highlights Qodiriy's ability to subtly convey sharp political and cultural critique under the guise of humor, demonstrating his unmatched linguistic talent and literary depth. His contribution to Uzbek literature remains influential and continues to serve as a model of stylistic excellence and intellectual courage.
Keywords: Satirical criticism, sarcasm, irony, master of words, the character Kalvak Mahzum.

When speaking of Uzbek novel-writing, it is impossible to overlook Abdulla Qodiriy and his literary legacy. Novels such as "O'tkan kunlar" ("Bygone Days") and "Mehrobdan chayon" ("Scorpion from the Altar") are universally acknowledged as a rich treasure for our people and literature. The famous Kazakh writer Mukhtar Auezov remarked: "Abdulla Qodiriy (Julqunboy) created magnificent novels. His works appeared in the 1920s as if the Pamir Mountains had suddenly arisen in a flat desert" [6]. Upon becoming acquainted with Qodiriy's work, one realizes that he was not only a novelist but also a significant figure across many branches of literature. The diversity of his oeuvre includes poetry, plays, short stories, essays, journalistic and literary-critical articles, translations of world literary classics, and a unique collection of sharply-worded satirical pieces. His title "King of the Feuilleton" is well-earned. The satirical stories and anecdotes he created in the 1920s are considered a rare find of that era and serve as a school of mastery even for contemporary literature.

Abdulla Qodiriy is widely regarded as the founder of Uzbek novel-writing and a masterful stylist whose satirical and literary contributions have profoundly influenced the development of Uzbek literature. The reviewed article provides a detailed examination of Qodiriy's satirical artistry, linguistic precision, and commitment to literary responsibility.

1. Thematic Range and Literary Breadth

Qodiriy's versatility as a writer is evident through his diverse body of work, which includes novels (O'tkan kunlar, Mehrobdan chayon), short stories, essays, plays, critical articles, and high-impact satirical sketches. The article emphasizes that Qodiriy never used words without purpose — every phrase in is texts serves a literary or ideological function.

2. Satire as a Tool for Social Criticism

A central focus of the article is Qodiriy's use of satire to address the socio-political issues of the 1920s. His works "From the Diary of Kalvak Mahzum" and "What Does the Irritable Toshpo'lat Say?" are analyzed as prime examples of "character-based humor." These stories expose religious ignorance, social hypocrisy, and bureaucratic absurdities through the voices of fictional but realistic characters.

3. Language, Style, and Folkloric Influence

Qodiriy's linguistic craftsmanship is praised for its richness in idiomatic expressions, proverbs, and culturally resonant phrases. His satire is deeply rooted in Uzbek folk traditions, yet elevated by classical literary techniques. Critics such as Izzat Sulton highlight his effective use of piching (sarcasm) as a defining feature of his satire.

4. Narrative Technique and Characterization

The article notes Qodiriy's use of inner monologue, self-revealing character speech, and external behavior to develop his satirical figures. Kalvak Mahzum and Toshpo'lat are not mere caricatures but socially symbolic figures — each representing the contradictions of their time. Importantly, Qodiriy often assigns biting social criticism to these naïve or flawed characters, protecting himself from direct political persecution.

5. Critical Reception and Legacy

The review draws on scholarly evaluations by Umarali Normatov and others who emphasize Qodiriy's contribution to the realist tradition in Uzbek prose. Normatov notes that even in satire, Qodiriy avoids tonal monotony and demonstrates stylistic color and emotional range. His work is praised as a literary "school of mastery" for both his contemporaries and modern writers. Throughout his creative career, Qodiriy never used words inappropriately or merely for decorative purposes. Every sentence in his works serves a specific role and function. In his article "To Our Writers," he emphasizes the importance of responsibility in the use of language: "When constructing sentences, one must exercise great consideration. It is a serious fault if only the writer understands his meaning and others do not. True writing means being able to convey one's ideas clearly to everyone, avoiding misunderstandings. Words and sentences that do not aid in expressing a thought have no place in writing" [1:230b]. As can be seen, Qodiriy calls upon himself and his peers to be precise in both word and thought, urging a sense of creative responsibility.

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Linguistic Approach To The Problems Of Dyslexia And Dysgraphia In Uzbek-Speaking Children

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Abstract
Dyslexia and dysgraphia are widely studied language-related learning disorders, yet research on their manifestations in Uzbek-speaking children remains limited. This article examines the linguistic characteristics of dyslexia and dysgraphia among Uzbek-speaking children, focusing on phonological, morphological, and orthographic difficulties. The study employs a mixed-methods approach, integrating phonological awareness tests, spelling analysis, and syntactic evaluations. The findings indicate that unique features of the Uzbek language, such as vowel harmony, agglutinative morphology, and complex consonant clusters, contribute to specific patterns of errors in dyslexic and dysgraphic children. The article discusses linguistic interventions tailored to the Uzbek linguistic system, emphasizing phonemic awareness training, orthographic reinforcement, and multisensory learning techniques. The study's implications suggest that a linguistically informed approach can significantly improve the diagnosis and remediation of dyslexia and dysgraphia in Uzbek-speaking children.
Keywords: Dyslexia, Dysgraphia, Uzbek Language, Phonological Awareness, Morphological Processing, Orthographic Difficulties, Linguistic Intervention

1. Introduction.

Dyslexia and dysgraphia are specific learning disorders affecting reading and writing abilities. While extensive research has been conducted on these disorders in Indo-European languages, studies on their manifestations in Turkic languages, including Uzbek, are scarce. Given the unique linguistic features of Uzbek, children with dyslexia and dysgraphia may exhibit distinct difficulties. This study aims to explore the linguistic underpinnings of dyslexia and dysgraphia in Uzbek-speaking children and propose effective intervention strategies. Dyslexia and dysgraphia are specific learning disorders that significantly impact reading and writing abilities, often posing lifelong challenges for affected individuals.

These disorders manifest through persistent difficulties in recognizing words, decoding written text, spelling, and writing fluently, despite adequate intelligence and educational opportunities. While extensive research has been conducted on dyslexia and dysgraphia in Indo-European languages, including English, German, and French, relatively little attention has been given to their manifestations in Turkic languages such as Uzbek. This gap in research is particularly concerning, given that linguistic structures vary across language families, and the symptoms of these disorders may present differently depending on the phonological, morphological, and orthographic characteristics of a given language.

Uzbek, a member of the Turkic language family, possesses unique linguistic features that may influence how dyslexia and dysgraphia manifest among native speakers. Unlike Indo-European

languages, Uzbek has an agglutinative structure, meaning that words are formed by adding various suffixes to a root word. Additionally, Uzbek has a relatively shallow orthography, where there is a close correspondence between letters and sounds. Despite these linguistic characteristics, children with dyslexia and dysgraphia in Uzbek may still struggle with phoneme-grapheme correspondence, word recognition, or syntactic processing, though potentially in ways that differ from their counterparts in other languages.

Given the limited research on these disorders in Uzbek-speaking populations, there is a pressing need to explore the linguistic underpinnings of dyslexia and dysgraphia within this context. "Understanding how these learning disorders manifest in Uzbek-speaking children can help educators, speech therapists, and policymakers develop more effective assessment tools and intervention strategies. This study aims to investigate the specific linguistic difficulties experienced by Uzbek-speaking children with dyslexia and dysgraphia and propose targeted solutions that can enhance their reading and writing skills. By bridging this research gap, the findings of this study could contribute to a more comprehensive understanding of language-specific learning disorders and inform educational practices tailored to the needs of affected children in Uzbekistan and other Turkic-speaking communities."[1]

2. Theoretical Framework

The linguistic approach to dyslexia and dysgraphia focuses on phonological processing, morphological awareness, and orthographic competence. Phonological deficits are often central to dyslexia, while dysgraphia is frequently linked to motor and orthographic impairments. Uzbek, as an agglutinative language, presents challenges such as complex suffixation, vowel harmony, and syllabic structure, which may influence error patterns in children with these disorders. The linguistic approach to dyslexia and dysgraphia provides a foundation for understanding these learning disorders through the lens of language structure and processing. This approach highlights key components such as phonological processing, morphological awareness, and orthographic competence, which play a crucial role in literacy development. While dyslexia is primarily associated with phonological deficits, leading to difficulties in decoding and recognizing words, dysgraphia is often linked to motor coordination issues as well as impairments in orthographic representation, affecting handwriting, spelling, and written composition.

Phonological processing refers to the ability to recognize, manipulate, and use sound structures within a language. Research on dyslexia suggests that phonological deficits are a core feature of the disorder, often impairing skills such as phonemic awareness (the ability to identify and manipulate individual sounds in words), phonological memory (the ability to retain phonological information), and rapid automatized naming (the ability to quickly retrieve verbal information). These deficits can make reading acquisition particularly difficult, as they hinder the ability to map sounds to letters and blend phonemes into words.

In Uzbek, phonological complexity arises from features such as vowel harmony, consonant assimilation, and syllabic structure, which may present unique challenges for children with dyslexia. The presence of vowel harmony, where vowels

[1] Öney, B., & Durgunoğlu, A. Y. (1997). Beginning to Read in Turkish: A Phonologically Transparent Orthography. *Applied Psycholinguistics, 18*(1), 1–15.

within a word must harmonize according to frontness or backness, may lead to confusion in phoneme-grapheme correspondence. Additionally, Uzbek has a relatively shallow orthography, meaning that letter-to-sound mapping is generally straightforward. However, children with phonological deficits may still struggle with phoneme discrimination, especially in cases of assimilatory processes or weak syllables, which could contribute to reading difficulties.

Morphological awareness, the ability to recognize and manipulate morphemes (the smallest units of meaning in a language), plays a crucial role in reading and writing. Languages differ in their morphological complexity, which can influence how dyslexia and dysgraphia manifest. For example, Indo-European languages such as English and French rely heavily on irregular spelling patterns and inflectional morphology, whereas Uzbek, as an agglutinative language, employs a complex system of suffixation to indicate grammatical relationships.

Agglutinative languages like Uzbek present specific challenges for children with dyslexia and dysgraphia, as they require the ability to process and correctly apply multiple affixes. A single word in Uzbek may contain several suffixes that modify meaning, tense, case, or possession. Children with dyslexia may struggle to identify morpheme boundaries, leading to errors in word segmentation and grammatical agreement. Similarly, children with dysgraphia may find it difficult to accurately spell and structure words due to difficulties in morpheme retrieval and written sequencing.

“Orthographic competence refers to the ability to recognize and apply spelling conventions within a given language. While Uzbek has a relatively regular orthographic system compared to deep orthographies like English, spelling errors are still common among children with dysgraphia due to deficits in motor coordination, visual processing, and memory retrieval. In particular, writing difficulties in Uzbek-speaking children may be influenced by the language's unique spelling rules, including vowel harmony, consonant alternations, and the placement of affixes.”[2]

Dysgraphia is often associated with impairments in fine motor control, which can affect handwriting fluency and letter formation. However, in languages like Uzbek, where words can be long due to extensive suffixation, children with dysgraphia may experience additional challenges in maintaining spacing, consistency, and accuracy in written text. The cognitive load required to process long morphological chains may further exacerbate spelling errors and reduce writing efficiency.

Given Uzbek's linguistic characteristics, children with dyslexia and dysgraphia may exhibit distinct error patterns compared to speakers of Indo-European languages. Some potential challenges include:

a) Phonological errors: Confusion between similar-sounding phonemes, particularly in the context of vowel harmony and consonant assimilation.

b) Morphological difficulties: Omissions, substitutions, or misplacement of suffixes due to challenges in processing affixation rules.

c) Spelling inconsistencies: Errors related to phoneme-grapheme correspondence, especially in complex syllable structures or under conditions of rapid writing.

d) Handwriting difficulties: Poor motor coordination leading to inconsistent letter formation, spacing, and punctuation errors.

[2] Öney, B., & Durgunoğlu, A. Y. (1997). Beginning to Read in Turkish: A Phonologically Transparent Orthography. *Applied Psycholinguistics, 18*(1), 1–15.

"By examining the linguistic underpinnings of dyslexia and dysgraphia in Uzbek-speaking children, this study aims to provide insights into how these disorders manifest in an agglutinative language context. Understanding these error patterns can contribute to the development of more effective diagnostic tools and intervention strategies tailored to the specific needs of Uzbek-speaking learners."[3]

3. Methodology

This study employed a mixed-methods approach to comprehensively investigate the linguistic characteristics of dyslexia and dysgraphia in Uzbek-speaking children. By integrating both quantitative and qualitative methods, the research aimed to capture a detailed understanding of phonological, orthographic, morphological, and syntactic difficulties experienced by children with these learning disorders.

The research sample consisted of 50 Uzbek-speaking children diagnosed with dyslexia and dysgraphia, aged 7 to 12 years old, recruited from various educational institutions in Uzbekistan. The participants were selected based on prior clinical assessments conducted by specialists in child psychology, speech therapy, and special education. Selection criteria included:

a)A confirmed diagnosis of dyslexia and/or dysgraphia by an educational psychologist or speech-language pathologist.

b)Native Uzbek speakers with no diagnosed intellectual disabilities or sensory impairments (e.g., hearing or vision loss).

c)Children enrolled in primary and secondary schools where Uzbek is the primary language of instruction.

A control group of 50 typically developing Uzbek-speaking children of the same age range was also included to provide a comparative analysis of linguistic performance.

The study incorporated a variety of linguistic assessment tools to analyze the reading and writing difficulties faced by children with dyslexia and dysgraphia. These assessments focused on three core areas:

1. Phonological Awareness Tests

Phonological deficits are a hallmark of dyslexia, making it essential to assess children's ability to perceive, manipulate, and recall phonemic structures in Uzbek. The following tests were conducted:

a)Phoneme Deletion Task: Children were asked to remove specific sounds from words (e.g., say *"bolta"* without */b/*).

b)Syllable Segmentation Task: Participants segmented words into syllables to assess phonological processing.

c)Rhyme Detection and Production Task: Children identified rhyming words and generated rhyming pairs to measure phonological memory.

2. Spelling and Writing Analyses

Since dysgraphia primarily affects writing abilities, this component aimed to evaluate orthographic errors, morphological difficulties, and motor coordination in writing. The following assessments were conducted:

a)Dictation Test: Children transcribed dictated sentences, and errors in spelling, letter formation, and suffix application were analyzed.

b)Free Writing Task: Participants were given picture prompts or topics to write short passages, allowing for the analysis of spontaneous writing difficulties.

c)Copying Task: A passage was presented for children to copy, assessing motor fluency, letter spacing, and consistency in handwriting.

3. Syntactic and Grammatical Evaluations

[3] Yuldashev, U. (2015). Orthographic Challenges in Uzbek and Their Implications for Literacy. *Central Asian Linguistic Studies, 8*(2), 78–92.

As agglutinative languages like Uzbek require high morphological and syntactic awareness, this component examined children's sentence construction challenges, including:

a)Sentence Completion Task: Children were given incomplete sentences and asked to fill in the missing words or affixes.

b)Grammatical Judgment Task: Participants identified grammatically correct and incorrect sentences and provided corrections.

c)Word Order Task: Given a set of jumbled words, children reconstructed grammatically correct sentences, analyzing syntactic processing abilities.

d)The collected data were analyzed through quantitative and qualitative methods:

e)Statistical analysis (e.g., t-tests, ANOVA) was applied to compare performance between children with dyslexia/dysgraphia and typically developing peers.

f) Error pattern analysis was conducted to identify recurrent phonological, orthographic, and morphological mistakes in reading and writing tasks.

g)Qualitative observations from free writing and oral assessments provided insights into individual language processing challenges.

Ethical approval for the study was obtained from relevant institutional review boards. Parental consent and child assent were secured prior to participation. All data were anonymized, and participants had the right to withdraw at any stage without consequences.

By employing a mixed-methods approach, this study aimed to provide a comprehensive analysis of the linguistic manifestations of dyslexia and dysgraphia in Uzbek-speaking children. The findings will contribute to the development of language-specific diagnostic tools and intervention strategies, ultimately supporting improved literacy education in Uzbekistan.

The findings of this study provide significant insights into the linguistic difficulties experienced by Uzbek-speaking children with dyslexia and dysgraphia. The results highlight specific error patterns influenced by the unique phonological, morphological, and orthographic characteristics of the Uzbek language.

4. Results and Discussion

Children diagnosed with dyslexia exhibited distinct reading and spelling difficulties, which can be attributed to phonological processing deficits and challenges with Uzbek's agglutinative morphology. The primary error patterns observed included:

A major challenge for dyslexic children was mapping phonemes to their corresponding graphemes, particularly in cases involving vowel harmony inconsistencies. While Uzbek orthography is relatively shallow, vowel harmony rules require phonemic adjustments based on suffixation, which dyslexic children struggled to apply correctly. Common errors included:

a)Substituting front vowels for back vowels in suffixes (e.g., *kitoblar* → *kitobler*).

b)Inconsistent application of vowel harmony, leading to mixed vowel patterns in affixed words.

c)This suggests that while dyslexic children may recognize individual phonemes, they struggle with integrating phonological rules into written language production.

Due to Uzbek's rich morphological system, dyslexic children frequently encountered difficulties with suffix attachment, leading to errors in case marking, verb conjugation, and possessive constructions. Observed mistakes included:

a)Omission of suffixes (e.g., *uyida* → *uyi* instead of "in his/her house").

b)Misplacement of suffixes within words, possibly due to difficulty segmenting morphemes.

c)Substituting similar suffixes, such as possessive and accusative markers (*kitobing → kitobini*).

These findings align with previous research suggesting that dyslexic children in morphologically complex languages often struggle with inflectional and derivational morphemes.

Another common difficulty observed was the simplification of consonant clusters in reading and writing. Uzbek contains a variety of word-initial and medial consonant clusters, which dyslexic children often reduced or altered, leading to phonological distortions in spelling. Examples included:

a)Cluster reduction .

b)Letter omissions in polysyllabic words (*tashkilot → tashklot*).

These errors suggest that children with dyslexia struggle with phonological working memory, leading to difficulties in processing complex syllabic structures.

Dysgraphic children exhibited pronounced difficulties in handwriting fluency, spelling accuracy, and sentence construction, with common errors affecting letter formation, word spacing, and syntactic structure.

Children with dysgraphia showed irregular letter shapes, inconsistent sizing, and poor spatial organization, which affected readability. The most common issues observed included:

a)Inconsistent letter sizing and spacing, leading to overlapping or disproportionate text.

b)Incomplete letter formation, especially with curved letters (e.g., *s*, *o*, *g*).

c)Reversed or mirror writing, particularly in younger participants.

These findings indicate that fine motor coordination and visual-motor integration deficits play a key role in Uzbek-speaking dysgraphic children's writing difficulties.

Dysgraphic children also exhibited significant challenges in constructing grammatically correct sentences. Due to difficulties in planning and sequencing words, their writing often lacked cohesion and syntactic accuracy. Notable patterns included:

a)Omission of case markers (e.g., *kitobni o'qiyapman → kitob o'qiyapman*).

b)Incorrect verb agreement in complex sentences.

c)Fragmented or run-on sentences due to difficulties in punctuation and clause structuring.

These errors suggest that dysgraphic children struggle not only with motor execution but also with linguistic organization, further complicating written expression.

When compared to the control group, typically developing Uzbek-speaking children performed significantly better in:

a)Phoneme-grapheme correspondence (fewer vowel harmony errors).

b)Morphological processing (more accurate suffix application).

c)Handwriting fluency and sentence structuring (fewer omissions and spelling errors).

These differences highlight that dyslexic and dysgraphic children require specialized intervention strategies tailored to the linguistic features of Uzbek.

The findings suggest that Uzbek-specific intervention strategies should focus on:

a)Phonological awareness training to improve vowel harmony recognition and consonant cluster processing.

b)Morphological instruction targeting suffix attachment and grammatical accuracy.

c)Multisensory writing techniques to enhance motor coordination and letter formation.

By incorporating these targeted approaches, educators and therapists can better support Uzbek-speaking children with dyslexia and dysgraphia, ultimately improving literacy outcomes in this population.

Based on the findings of this study, targeted intervention strategies are proposed to

address the specific reading and writing difficulties experienced by Uzbek-speaking children with dyslexia and dysgraphia. These interventions are designed to align with the linguistic structure of Uzbek, emphasizing phonological processing, orthographic accuracy, and morphological awareness.

5. Linguistic-Based Interventions.

Phonemic awareness is a foundational skill for reading and spelling, and difficulties in phoneme discrimination are a key characteristic of dyslexia. To enhance phonological processing in Uzbek-speaking children, the following strategies are recommended:

Auditory Discrimination Exercises:

a)Minimal pair training (e.g., distinguishing between words with different vowel harmony patterns).

b)Identifying initial, medial, and final phonemes in words to improve phoneme-grapheme correspondence.

c)Blending and segmenting syllables in multisyllabic words to reinforce phonemic structure.

Phonological Manipulation Activities:

a)Phoneme deletion tasks

b)Syllable reversal exercises to strengthen phonological awareness (e.g., *maktab* → *tabmak*).

These activities can be incorporated into classroom instruction or individualized literacy programs to improve phonological deficits in dyslexic children.

Given the challenges observed in phoneme-grapheme correspondence and spelling accuracy, structured exposure to Uzbek orthographic rules is essential. The following interventions focus on reinforcing spelling consistency:

Explicit Instruction in Spelling Rules:

a)Teaching vowel harmony patterns explicitly through rule-based exercises.

b)Practicing spelling through dictation tasks and error correction exercises.

c)Using word families to help children recognize common spelling patterns (*kitob-kitoblar-kitobxon*).

Word Mapping and Visual Cues:

a)Implementing color-coded suffixes to visually highlight case markers and possessive endings.

b)Using spaced repetition software to reinforce high-frequency words and affixes.

c)Creating orthographic word walls displaying commonly miswritten words.

These strategies aim to develop automaticity in spelling and reduce common letter omissions and substitutions.

“Multisensory learning has been widely recognized as an effective approach for children with dyslexia and dysgraphia. By engaging visual, auditory, and kinesthetic modalities, children can strengthen their reading and writing skills more effectively.”[4]

The following methods are recommended:

Visual Strategies:

a)Using graphic organizers to break down complex word structures.

b)Implementing word tracing and sandpaper letters to reinforce letter formation.

c)Providing illustrated word associations to support vocabulary retention.

Auditory Techniques:

a)Encouraging oral spelling before writing words.

b)Incorporating rhyming games and rhythmic chanting to reinforce phoneme patterns.

c)Using text-to-speech software to improve reading fluency.

Kinesthetic and Tactile Methods:

a)Writing words in sand, clay, or textured surfaces to improve muscle memory.

b)Encouraging air writing and finger tracing to develop motor coordination.

[4] Snowling, M. J. (2000). Dyslexia (2nd ed.). Blackwell Publishers.

c)Implementing interactive games that require physical movement (e.g., jumping on syllables).

These multisensory strategies can significantly enhance cognitive engagement and retention for children with dyslexia and dysgraphia.

Given Uzbek's agglutinative nature, morphological instruction is essential for improving suffix segmentation and grammatical accuracy. The following interventions focus on enhancing morphological awareness:

Explicit Suffix Training:

a)Teaching morpheme segmentation strategies (e.g., breaking down *o'qituvchilarimizdan* into o'qi-tuvchi-lar-imiz-dan).

b)Using morphological puzzles to help children construct words with correct affixation.

c)Providing sentence completion exercises that require selecting appropriate suffixes.

Hands-on Morphological Manipulation:

a)Implementing magnetic morpheme tiles for children to physically assemble words.

b)Conducting word-building activities where students add or modify suffixes to change meaning (e.g., *o'qituvchi* → *o'qituvchilar* → *o'qituvchilarimiz*).

Contextualized Learning through Stories and Dialogues:

a)Using short stories and dialogues where students identify and analyze affixes in real-world contexts.

b)Encouraging peer discussions to reinforce suffix usage in conversational settings.

Since dysgraphic children struggle with letter formation and sentence structuring, targeted interventions should focus on handwriting fluency and syntactic awareness. The following approaches are recommended:

Handwriting Support:

a)Using large-lined paper and grid notebooks to guide proper letter sizing and spacing.

b)Encouraging slow, deliberate writing with guided tracing before freehand writing.

c)Incorporating typing practice as an alternative to handwriting for extended tasks.

Sentence Structuring Exercises:

a)Providing sentence templates to guide organization.

b)Using visual sentence diagrams to help children understand grammatical relationships.

c)Teaching punctuation through hands-on activities, such as rearranging printed sentence strips.

To ensure these interventions are effective, teacher training and curriculum adaptation are essential. Strategies for successful implementation include:

Professional Development for Educators:

a)Training teachers in phonological awareness instruction and multisensory learning techniques.

b)Equipping educators with structured lesson plans tailored to dyslexic and dysgraphic learners.

Classroom Modifications:

a)Allowing extra time for reading and writing tasks.

b)Providing oral testing options for students who struggle with written assessments.

c)Encouraging peer-assisted learning to support struggling students.

Parental Involvement:

a)Conducting parent workshops to teach home-based strategies for reinforcing literacy skills.

b)Providing guided reading lists and literacy games for home practice.

By implementing linguistically tailored interventions, educators and therapists can provide effective support for Uzbek-speaking children with dyslexia and dysgraphia. These strategies not only address the unique phonological, morphological, and orthographic challenges in Uzbek but also foster inclusive literacy

development, ultimately improving academic outcomes for affected children.

6. Conclusion

This study underscores the necessity of a linguistic approach in the diagnosis and remediation of dyslexia and dysgraphia among Uzbek-speaking children. Given the distinct phonological, morphological, and orthographic features of Uzbek, children with these disorders exhibit unique error patterns that require tailored intervention strategies. By addressing phonemic awareness deficits, reinforcing orthographic rules, and enhancing morphological instruction, educators and speech therapists can develop more effective literacy programs that align with the structural complexities of the Uzbek language.

The findings emphasize the importance of:

a)Phonological training, particularly in vowel harmony recognition and consonant cluster processing.

b)Morphological awareness instruction, focusing on suffix segmentation and case marking accuracy.

c)Multisensory learning techniques, integrating visual, auditory, and kinesthetic methods to reinforce reading and writing skills.

By incorporating these strategies into educational curricula, intervention programs can enhance literacy development for children with dyslexia and dysgraphia, ultimately fostering more inclusive learning environments.

While this study provides a foundational understanding of dyslexia and dysgraphia in Uzbek-speaking children, further research is necessary to expand and refine intervention models. Key areas for future investigation include:

a)Larger and More Diverse Sample Sizes: Future studies should include a broader population sample, considering regional dialectal variations within Uzbek and socioeconomic factors that may influence literacy acquisition.

b)The Role of Bilingualism: Many Uzbek-speaking children grow up in multilingual environments (e.g., with exposure to Russian or English). Examining how bilingualism affects dyslexia and dysgraphia could provide valuable insights into cross-linguistic transfer effects and potential compensatory strategies.

c)Longitudinal Studies on Intervention Effectiveness: Tracking children's progress over extended periods can help assess the long-term impact of phonological, morphological, and orthographic interventions.

d)Technological and Digital Learning Tools: The integration of assistive technologies, such as speech-to-text software and interactive literacy apps, should be explored to determine their effectiveness in supporting children with writing difficulties.

By addressing these gaps, future research can further refine assessment and intervention strategies, ensuring that children with dyslexia and dysgraphia receive the specialized support needed to succeed in their literacy development.

Ultimately, this study contributes to a growing body of research on language-specific manifestations of learning disorders, paving the way for more linguistically and culturally responsive educational practices in Uzbek-speaking contexts.

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The Difference Between a Term and a Word: A Linguistic Perspective

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Abstract
Human language is a complex physiological activity influencing and influenced by a vast range of systems. Therefore, fixing a word for a specific meaning and attaching a cultural meaning to words becomes challenging. The main difference between word and term is a word or phrase with a specific, often technical, meaning within a particular context or field. Essentially, all terms are words, but not all words are terms.
Keywords: Word, term, transation, translation, lexicography, terminology, context, expression, collocation, style, thesauri.

Intrdoduction:
Language serves as a fundamental tool for human communication. Within it, both words and terms play crucial roles. While often used interchangeably in casual conversation, the concepts of “word” and “term” are distinct in linguistics, particularly in specialized and academic contexts. Understanding the difference between a word and a term is essential for fields such as lexicography, translation, technical writing, and terminology science.
A word is the smallest independent unit of meaning in a language that can stand alone. It is a basic element of vocabulary that carries semantic content and grammatical function. Words can be general or specific and are used in everyday communication across various domains. For example: book, run, beautiful, tree are all general words used in daily speech. Words can be: lexical (nouns, verbs, adjectives) or grammatical (prepositions, articles, conjunctions). Words have a universal meaning to the speakers of a particular language, which applies to our day-to-day communication. A word can be transformed into a term when used in a discipline to refer to a specific object of situation. This object is known **TERMINOLOGZATION.**
A Definition of a Term, on the other hand, is a word or a phrase that has a specific meaning within a particular domain or field of knowledge. Terms are often part of specialized or technical vocabulary used by professionals in disciplines such as law, medicine, science, and engineering. Examples: Photosynthesis in biology, Inflation in economics, IP address in computer science. A term does not have a universal meaning. It has specific meaning in a specific context. When the subject matter has become popularized, and laypersons understand enough about the consept to use the term ,this is known as **DETERMINOLOGIZATION.**
Unlike general words, terms are context-dependent, and their meaning may not be fully understood without knowledge of the field in which they are used.
Key Differences Between a Word and a Term
Scope General language Specialized fields
Meaning Broad, often polysemous Precise, context-specific
Usage Daily communication Technical or academic communication

Understanding Known to general public may require domain-specific knowledge
Examples Light, go, good Quantum mechanics, derivative
Overlap Between Words and Terms. It is important to note that a term is also a word (or phrase), but not every word qualifies as a term. The same lexical unit can function as a general word in one context and as a term in another, depending on usage. For example:cell as a general word (e.g., prison cell) Cell as a biological term (e.g., basic unit of life)
While both words and terms are linguistic units, they serve different functions. Words are the building blocks of language used in a general sense, whereas terms are specialized expressions used within specific domains. Understanding this distinction is vital for effective communication, especially in academic, scientific, and professional settings. Importance in translation: Especially, scientific and technical translation, identifying whether a word is a term is crucial. Misinterpreting is a term as a general word can lead to serious misunderstanding. For example:
The English term is Debit in accounting should not be translated as the everyday verb to owe, but as a specialized financially operation in the appropriate accounting system. Terminological consistency is a central challenge for translators working in legal, medical,or engineering,fields. Hence, terminology databases and glossaries are key tools for professional translators .Terminology science focus on:

- Term information and standardization
- Term extraction from corpora
- Creation of controlled vocabularies, thesauri, and ontologies.

Unlike general lexicography (dictionary-making) terminology work is more oriented toward systematization and consistency within domains of knowledge.

Understanding the distinction between a word and a term is not merely academic it has real-word application in science, education, law, technology and multilingual communication. While words are universal and flexibale, terms are domain-bound and precise. Grasping this difference enhances clarity, supports accurate communication and ensures better understanding across disciplines and cultures. Examples: as a word (general use):The gravity of the situation made everyone silent. Gravity means seriousness or importance. It is used in a non-technical, everyday context. This a general word.
As a term (scientific Use):Gravity is the force that attracts a body toward the center of the Earth.Gravity refers to a specific scientific concept in physics.It is defined term used in the field of science.This a term.
Example:The word “Cell”
As a term from a biology textbook:The cell is the basic structural and functional unit of all living organisms-Campbell biology(Textbook).In this context,cell is a biological term.It has a precise,technical definition in the field of biology.This is a term because it refers to a scientic concept.As a word from Literature or general use:He sat alone in the dark prison cell,listening to the silence.A line from a novel or story.In this sentence cell means a small room,like in a prison.It is used in a general,non-technical way.This is word,used in everyday or literary language. In some cases,if you come across an unusual word, the definition of the word is close to it.Try to understand the definition and apply it to the word context.
Interesting Facts About Words vs. Terms
1. Origin of Terminology Science
The science of terminology was developed in the 1930s by Eugen Wüster, an Austrian engineer.
He believed that standardized terms would help scientists and engineers communicate

more clearly across countries and languages.

2. Terms Can Be Multi-Word Phrases

A term is not always one word — it can be a phrase!

Example: “climate change”, “artificial intelligence”, or “terms and conditions”.

These are called compound terms or multi-word terms and are common in technical and legal language.

3. Same Word, Different Fields – Different Terms

A single word can be a different term in different fields:

“Function” in mathematics means a specific relationship between variables.’’Function” in biology refers to the role of an organ.”Function” in everyday use means an event or a task.

Detailed Insights: Word vs. Term

1. Grammatical Role:Words can belong to any grammatical category: nouns (book), verbs (run), adjectives (beautiful), etc.

Terms are usually nouns or noun phrases, since they name specific concepts, objects, or processes. Example: neural network, carbon footprint, intellectual property.

2 Use in Dictionaries vs. Glossaries

General dictionaries (like Oxford, Merriam-Webster) define words with all their possible meanings and usages.

Glossaries, terminology databases, and thesauri (like IATE, Termium, or ISO standards) define terms with one specific meaning for one field.

3. Creation of Terms (Term Formation)

Terms are often created using special processes:

Borrowing: e.g., déjà vu (from French), yoga (from Sanskrit)

Acronyms: e.g., NASA, RADAR, COVID-19

Compounding: e.g., database, fingerprint, brainstorm

Affixation: e.g., biodegradable, antisocial, submarine

4. Multilingual Terminology Challenges

The same concept may require different terms in different languages, and sometimes one language lacks a direct equivalent. Example: The English term “cloud computing” might be described with a phrase or borrowed directly in other languages.

This creates problems in: Translation ,legal documentation ,cross-border scientific collaboration

5. Terminological Accuracy is Critical

In professional fields, using the wrong term can have serious consequences medicine: Misunderstanding “malignant” vs. “benign” could affect diagnosis. Engineering: Confusing torque with force can result in faulty designs.

Law: Using rights instead of privileges can lead to legal misinterpretation.

6. Cognitive Difference

Words are learned naturally as part of language acquisition. Terms are often taught intentionally (e.g., in school or university), and understood better within context. For example, a child learns the word "plant" naturally (a green thing), but the term "photosynthesis" needs formal education.

7. Collocations and Style

Words are used more flexibly and creatively in poetry, novels, and informal speech. Terms are used with strict consistency in technical writing, academic papers, and manuals.

Terms often appear in: Research papers, technical reports ,legal contracts, scientific presentations

Conclusion:

Why Does It Matter? Understanding the difference between a word and a term helps you:

I guess, this topic is great and useful for curriculum design at university and to educate students for diversity language. For example it helps students distinguish every day words from subject-spesific terms, like, in their topics. Also,teach second language

learners for instance French or Italian, how to handle disipline-spesific vocabulary. If they know the difference between word and term, thew will find every mistakes very easily. Improve domain-specific search engines or chatbots. Recognizing how words become terms- a process we can call “termification”-helps us better navigate acvademic, professional,and multilingual environments where clarity,clear and accuracy are critical.

Communicate more precisely in academic and professional settings

Translate more accurately

Avoid ambiguity and confusion

Think more critically about language in science, law, technics, and education for variety of fields.

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Technology Of Planting Seeds

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Abstract
The article presents the results of the technological process of research on the preparation of the soil of the combined aggregate for minimal tillage.
Keywords: Combined aggregate, pulverizer, fertilizer, deep softening working body, seed, cotton.

Introduction.
The method of planting seeds in the field is widely used in our Republic at the present time. In this method, after the fields are fertilized and plowed in the fall, unevenness is leveled, chiseled, the field surface is treated with a harrow and a trowel, and the dust is removed from behind. In the spring, the fields are cultivated and seed is sown on them [1].
According to the research conducted at the Agricultural Mechanization Research Institute, when the seed is planted in the field and cotton is grown:
- the zone with soft soil where cotton roots develop increases;
- the seeds are planted in soft soil that is not crushed by the wheels of tractors and agricultural machines;
- due to the increase in the level of the field receiving sunlight, more heat is accumulated in the soil and its temperature is two to three degrees higher than the flat ground. This makes it possible to start planting early and collect the seed quickly;
- since the bushes are removed in the fall, the work of processing the land before planting becomes much easier;
- in the years of low rainfall, the dry soil on the paddy field is removed, the seed is planted in wet soil and its germination is ensured;
- due to the fact that the rainwater that falls on the paddy field flows down to its edge, there is no strong slush on the row where the seed is sown.
For this reason, root rot disease of plants is rare;
- during the first treatment between the rows of cotton, the probability of burying the sprouts of cotton with soil decreases;
- the fertilizers given before planting are given only to the part where the seeds are planted, not to the whole;
- the susceptibility of cotton to various diseases decreases.
Due to these advantages, when the seed is planted in the field, it germinates better than when it is planted on the flat ground, the plants develop better and as a result, a high yield is achieved tomorrow [2].

Methodology.
The existing technologies of seed preparation for sowing on paddy fields consist of many agrotechnical activities, such as fertilizing, plowing, harrowing, harrowing, grinding and harvesting, which are carried out with separate aggregates, and for their implementation at least 2-3 types of tractors and 5-6 types of agricultural cars and weapons are being used. This, in turn, leads to an increase in labor, fuel and other material expenses in preparing the land for planting, and the repeated passing of aggregates through the field leads to the destruction of the soil structure and compaction of the subsoil layer. One of the most important ways to overcome these shortcomings is to use

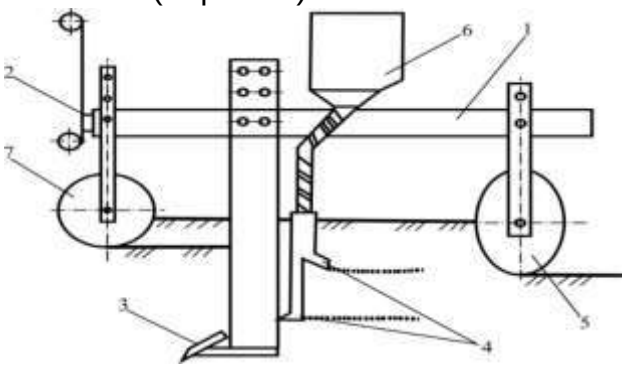
combined units, add and carry out technological processes simultaneously, reduce their number and reduce the depth of processing, and switch to step-by-step processing without complete processing of the driving layer.

Results.

Combined units used in tillage combine some or all of the main and pre-planting technological processes in one pass through the field. This will reduce the negative impact of tractors and agricultural machines on the soil, reduce fuel consumption, labor costs and other material costs, increase the quality and yield of work, reduce the time of soil cultivation, and preserve the moisture accumulated in it. The combined aggregates used in tillage can be divided into the following groups [3,4]:

- aggregates that perform basic and additional processing of land. Such aggregates mainly consist of the main tillage machine (turning plow, chisel plow, deep softener) and the working bodies installed on it, the working bodies crush, level and compact the plowed or softened field surface;
- aggregates that add processing processes to the land before planting. When such aggregates pass through the field, they soften the soil to a specified depth, level its surface, grind it and compact it to the required level;
- aggregates that carry out the main or pre-planting treatment of the land together with fertilization. Such aggregates are also equipped with fertilizers, and in one pass through the field, the soil is treated for the main or before planting, and fertilizers are added to it;
- aggregates that perform land cultivation and planting activities together. Such aggregates consist of tillage and planting machines or working bodies. Therefore, they combine tillage and planting [5].

Discussion. The combined aggregate developed at the Research Institute of Agricultural Mechanization is intended for use in fields where the stalks are uprooted or crushed and scattered on the field surface. The technological process performed by the combined unit is described (1- picture).



a – aggregate before the transition of push and pull;
b – newly formed pushta and egat

1-picture. The technological process of the combined unit developed at QXMITI

The combined unit developed at the Research Institute of Agricultural Mechanization is simpler, less material and energy intensive compared to other units. When using a combined unit, it was shown that the cost of labor and fuel and lubricants for preparing the land for sowing is reduced, and the yield of cotton is increased [6].

Conclusion

1. The existing technology of land preparation for harvesting consists of a variety of agrotechnical activities, such as fertilization, plowing, harrowing, grinding, grinding, which lead to the consumption of additional labor, fuel and other material costs, as well as to the destruction of the soil structure.
2. Reducing fuel consumption and other material costs in the preparation of rice fields can be achieved by using a combined unit that performs several agrotechnical measures at once.

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Rheological Properties Of Solutions In The Production Of Potassium Sulfate

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Abstract
This study investigates the rheological properties and phase separation characteristics of solutions during potassium sulfate production through the conversion process involving potassium chloride and ammonium sulfate. The research focuses on the clarification kinetics, filtration rates, and solid-liquid separation efficiency in multi-stage conversion processes. Experimental investigations were conducted using graduated cylinders and Buchner funnel filtration systems to evaluate settling velocities and filtration characteristics. Results demonstrate that suspension clarification on the second stage reaches maximum values of 66.25% within 95 seconds, while filtration rates vary from 1000-1200 kg/m²·h for the first stage to 2100-2300 kg/m²·h for the second stage. The study reveals that temperature elevation from 20°C to 60°C and molar ratio adjustments from 1:1 to 1:2 significantly influence filtration efficiency. These findings provide crucial insights for optimizing industrial potassium sulfate production processes through enhanced understanding of suspension rheology and phase separation mechanisms.
Keywords: potassium sulfate, rheological properties, phase separation, filtration kinetics, suspension clarification, conversion process, ammonium sulfate, potassium chloride

Introduction. Potassium sulfate (K_2SO_4) represents one of the most important potassium-containing fertilizers in modern agriculture, providing essential nutrients for plant growth without introducing chloride ions that may be detrimental to certain crops [1]. The industrial production of potassium sulfate through conversion processes involves complex chemical reactions between potassium chloride (KCl) and various sulfate sources, including ammonium sulfate ($(NH_4)_2SO_4$) and sodium sulfate (Na_2SO_4) [2]. These processes generate multi-phase systems characterized by the formation of suspensions containing both solid crystalline products and liquid phases with varying concentrations of dissolved salts.

The rheological behavior of these suspension systems plays a crucial role in determining the efficiency of downstream processing operations, particularly in solid-liquid separation stages [3]. Understanding the settling characteristics, filtration kinetics, and clarification mechanisms becomes essential for optimizing production efficiency and product quality. The conversion process typically involves multiple stages, each generating suspensions with distinct rheological properties that influence the overall process economics [4].

Previous studies have indicated that the phase separation step often represents the rate-limiting stage in potassium sulfate production, necessitating comprehensive investigation of the factors affecting suspension behavior [5]. The present research addresses this critical aspect by examining the influence of various operational parameters on the rheological properties of solutions and suspensions encountered during potassium sulfate production.

Literature Review

Industrial potassium sulfate production through conversion processes has been extensively studied, with particular

emphasis on thermodynamic equilibria and crystallization kinetics [6]. Wang et al. investigated the solid-liquid equilibria in the K^+-NH_4^+-SO_4^{2-}-Cl^--H_2O system, providing fundamental data for process optimization [7]. Their findings established the theoretical foundation for understanding the formation of double salts and intermediate compounds during the conversion process.

Research conducted by Li and Zhang focused on the crystallization behavior of potassium ammonium sulfate ($K_2SO_4 \cdot (NH_4)_2SO_4$) in aqueous solutions, revealing the critical role of temperature and concentration gradients in determining crystal morphology and size distribution [8]. These studies highlighted the importance of controlling nucleation and growth rates to achieve optimal product characteristics.

The rheological properties of salt solutions have been investigated by several researchers, with particular attention to the effects of ionic strength and temperature on viscosity and flow behavior [9]. Chen et al. demonstrated that the presence of multiple ionic species significantly affects the rheological characteristics of concentrated salt solutions, leading to non-Newtonian behavior under certain conditions [10].

Recent investigations by Kumar and Patel examined the filtration characteristics of crystalline suspensions in potassium sulfate production, identifying key parameters affecting filtration rates and cake formation [11]. Their work established correlations between particle size distribution, suspension concentration, and filtration efficiency, providing valuable insights for process design and optimization.

Research Methodology

The experimental investigations were conducted using analytical grade potassium chloride (KCl) and ammonium sulfate ($(NH_4)_2SO_4$) obtained from commercial sources. All chemicals were used without further purification, and distilled water was employed throughout the experiments to ensure reproducible results.

Suspension clarification experiments were performed using graduated cylinders with a capacity of 100 ml, equipped with height markings in centimeters along the entire length. The studies were conducted at ambient temperature (25°C) to evaluate the settling behavior of suspensions generated during the first and second stages of the conversion process.

The degree of clarification was calculated using the following relationship:

Degree of clarification (%) = $(h_1 - h_2)/h_1 \times 100$

where h_1 represents the initial suspension height and h_2 represents the height of the clarified liquid interface at time t.

Filtration characteristics were evaluated using Büchner funnel systems with varying filtration surface areas. For initial screening experiments, a filtration area of 0.002 m² was employed under vacuum conditions of 400 mm Hg. Detailed filtration studies utilized a larger filtration area of 0.005 m² with vacuum maintained at 300 mm Hg.

The filtration rate was calculated according to the formula:

$W = (m \times 3600)/(S \times t)$

where W represents the filtration rate (kg/m²·h), m is the mass of filtered material (kg), S is the filtration surface area (m²), and t is the filtration time (s).

The influence of temperature on filtration characteristics was investigated in the range of 20-60°C. Molar ratios of $KCl:(NH_4)_2SO_4$ were varied from 1:1 to 1:2 to evaluate the effect of stoichiometric relationships on suspension properties. Each experiment was conducted in triplicate to ensure statistical reliability of the results.

Analysis and Results

Since the rheological properties of solutions, suspensions and pulps significantly affect the technological parameters of the potassium sulfate

production process, the densities and viscosities of the prepared 39.1% ammonium sulfate solution, 10 and 26.8% potassium chloride solutions and mother liquors of the first and second stages of conversion, obtained at S:L = 1:1.7 and 1:1, respectively, depending on the temperature, were studied. The results obtained are presented in Tables 1 and 2.

Table 1. Effect of temperature on the density and viscosity of the initial solutions of ammonium sulfate and potassium chloride

Original solutions	Density, g/cm^3				Viscosity, cPa			
	20°C	40°C	60°C	80°C	20°C	40°C	60°C	80°C
$(NH_4)_2SO_4$, 39.1 %	1,210	1,208	1,205	1,200	2,125	1,748	1,407	1,116
KCl, 26.8%	1,184	1,171	1,158	1,146	0.905	0.835	0.719	0.605
KCl, 10%	1,058	1,050	1,044	1,038	1,021	0.811	0.665	0.583

Data on the density of 39.1% ammonium sulfate solution, 26.8% and 10% potassium chloride solutions depending on temperature are necessary to establish the saturation of the solutions by density.

As can be seen from Table 2, the densities of saturated solutions of ammonium sulfate vary from 1.210 g/ cm^3 at 20 °C to 1.200 g/cm^3 at 80 °C. The viscosity of the solutions is 2.125-1.116 cPa .

The densities of potassium chloride solutions decrease more noticeably with an increase in temperature from 20 °C to 80 °C and are 1.184-1.146 g/cm^3 and 1.058-1038 g/cm^3 · The viscosities of the solutions vary within the range of 1.021-0.583 cPa.

Table 2. Effect of temperature on the density and viscosity of mother liquors the first and second stages of obtaining potassium sulfate

Density, g/ cm^3				Viscosity, cPa			
20°C	40°C	60°C	80°C	20°C	40°C	60°C	80°C
First stage, T:F=1:1.7							
1.171	1.159	1.149	1.140	0.995	0.835	0.738	0.669
Second stage, T:F=1:1							
1,049	1.048	1.046	1.038	0.875	0.793	0.709	0.605

The densities of the mother liquors of the stage of potassium chloride conversion with ammonium sulfate decrease with an increase in temperature from 20 °C to 80 °C from 1.171 g/cm^3 to 1.140 g/cm^3, and the densities of the mother liquors of the second stage are 1.049-1.038 g/cm^3 · The viscosities of the mother liquors change insignificantly and are 0.995-0.605 cPa (Table 1)

As can be seen from the tables, both the density and viscosity of the solutions decrease with increasing temperature. At the same time, all solutions have acceptable rheological properties and do not cause difficulties during their transportation.

Conclusion

This comprehensive investigation of rheological properties in potassium sulfate production reveals significant insights into phase separation mechanisms and suspension behavior during multi-stage conversion processes. The experimental results demonstrate that clarification kinetics and filtration rates are substantially enhanced in the second stage of conversion, with filtration rates increasing from 1000-1200 kg/m²·h to 2100-2300 kg/m²·h. The study establishes that temperature elevation from 20°C to 60°C and molar ratio optimization from 1:1 to 1:2 provide moderate improvements in filtration performance, with the most significant gains observed at zero cake height conditions. The formation of filter cake represents a

critical limitation, reducing filtration rates by approximately 50% when cake height reaches 6 mm, indicating the importance of optimizing filtration cycle times in industrial applications. These findings provide essential data for process optimization and equipment design in potassium sulfate production facilities, contributing to enhanced efficiency and reduced operational costs.

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Pedagogical Features Of Education Of Artistic And Aesthetic Taste Of Students By Means Of Digital Technologies

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Abstract
This article explores the pedagogical features of developing students' artistic and aesthetic taste through the use of digital technologies. It highlights the growing role of modern information and communication tools in art and aesthetic education. The study analyzes how digital media can enhance students' interest in fields such as visual arts, music, and design. It also examines the role of digital tools in fostering visual imagination, aesthetic evaluation, and creative thinking. Moreover, the article discusses the effectiveness of interactive methods and multimedia tools in improving the learning process.
Keywords: artistic and aesthetic taste, digital technologies, pedagogy, art education, visual imagination, creative thinking, multimedia, interactive methods.

Every day, the need for changes in spiritual culture, moral life of society, search and affirmation of new socially significant values of the individual is becoming more and more important. The strategic objective of education reform is to develop the national education system in order to form a well-rounded and deeply educated, competitive individual. This involves the introduction of modern technologies into the educational process, defines new guidelines for the development of education. At the same time, education should be the main channel for transmitting information and updating cultural potential. Today, we realize the fundamentally new role of education in the modern world, its decisive importance in geopolitical processes aimed at creating a viable system of continuous learning, forming the intellectual and cultural potential of the nation. In this regard, we are impressed by the education of artistic and aesthetic taste in students of general secondary schools. Since the issue of education of artistic and cultural values in students, aestheticization of all links of the educational process and ensuring aesthetic taste from both theoretical and practical sides remains relevant. Outstanding teachers, philosophers, and public figures of different eras noted the need for an extremely attentive attitude to issues of artistic and aesthetic education. For example, the famous philosopher D. Diderot claimed in the 18th century that "a country in which they taught drawing the way they taught reading would be ahead of all countries in all the arts." The educational potential of art lies in its very essence. This is explained by the fact that the emotional side of consciousness, the aesthetic ideals of the individual are primary in relation to logical thinking, intellect, and are the main ones in the formation of the spiritual interests of the individual, and the attitude to the world in general. The outstanding American thinker R. Emerson noted that "the true indicator of civilization is not in the level of well-being and education, not in the greatness of cities, not in the abundance of harvests, but in the image of a person brought up by the country." K.D. Ushinsky noted that "each subject, one way or another, contains an aesthetic element, the transmission of which to students should be kept in mind by the teacher." The famous representative of the Jadid movement Abdullah Avloni considered education to be the basis of life of every individual: "Education for us is a matter of life or death,

salvation or destruction, happiness or misfortune." What is surprising is that these views on the cultivation of a sense of beauty in students act as a source of awakening in the student the ability to perceive and create beauty. It is also important to emphasize that the influence of art on personality is being considered more and more widely today and its consequences have begun to be studied more closely. Based on this principle, we believe that the cultivation of artistic and aesthetic taste in students with the help of digital technologies involves the use of various interactive tools and resources to develop their ability to perceive, evaluate and create beauty in art and the surrounding life, which includes not only familiarization with works of art, but also active creative participation in the creation of their own content, for example, in digital painting, music, video editing and other types of digital creativity.

Artistic and aesthetic education is a pedagogical process that results in the formation of the student's artistic and aesthetic attitude to the world around him, work activity; the formation of a culture of relationships with people. It is important that in the process of artistic and aesthetic education, students themselves become creators of beauty: not only were able to see and understand it, but also to create beauty around themselves. Since art, acting on the emotional sphere of the individual, becomes a powerful means of moral education of the student. Emotional perception of artistic images that reveal the beauty of the surrounding world contributes to the formation of the student's worldview and spiritual culture. The task of nurturing artistic and aesthetic taste in schoolchildren is successfully implemented in fine art lessons. They provide an opportunity to effectively develop a sense of beauty, form aesthetic tastes, the ability to understand and appreciate works of art, the beauty and wealth of the native land. This means that art develops personality universally, which is manifested in any sphere of human activity - scientific, political, industrial, pedagogical, etc. Among other types of art, fine art is unique in solving the problems of both artistic and personal development, civic and spiritual formation of the younger generation. This is due not only to the nature of the perception of fine art, but also to the fact that already at an early age, visual activity is one of the most accessible and emotionally exciting forms of creativity.

Developing artistic and aesthetic taste in students through digital technologies is a pressing pedagogical task that requires an integrated approach. Digital technologies open up new opportunities for developing aesthetic perception and creativity.

In our opinion, the pedagogical features of developing artistic and aesthetic taste in students through digital technologies include: selection of educational resources, integration into the educational process, stimulation of creative activity, teamwork and communication, teaching digital ethics. That is why it is important to carefully select digital tools and content that match the age and interests of students. It is important that the resources are not only entertaining, but also educational, and promote the development of artistic taste and critical thinking. Familiarization with these resources promotes the integration of the educational process, since digital technologies should be organically transformed into the educational process, and not used in isolation. For example, digital tools can be used to create collages, animations, digital presentations, virtual excursions into the world of art, etc.

In addition, it is necessary to teach students to critically evaluate digital content, distinguish high-quality works of art from low-quality ones, and understand the influence of various digital technologies on the perception of beauty. This process will go better if students' creative activity is

stimulated. It is important to take into account that digital technologies can be a powerful tool for developing students' creative abilities. For example, the use of graphic editors, programs for creating music, video editing, etc.

When organizing joint activities of teachers and students, it is important to organize joint creative projects using digital technologies so that students can exchange experiences, learn from each other and develop teamwork skills. Such training should be accompanied by digital ethics, developing students' skills in the responsible use of digital technologies, understanding copyright, showing respect for the creativity of classmates, friends, etc. It is important to involve parents in the process of nurturing students' artistic and aesthetic taste, informing them about digital resources that can be used in the family to develop aesthetic perception. It is very important to help parents choose high-quality digital content that forms correct ideas about beauty and art, and develop students' skills in the real perception of art and beauty in the world around them.

Thus, the development of artistic and aesthetic taste in students through digital technologies is an important process that requires teachers to be able to use the capabilities of digital tools, develop critical thinking in students and form a responsible attitude towards digital technologies in order to help them become culturally developed and harmonious individuals. Thus, the development of artistic and aesthetic taste in students determines such a distribution of accents of tasks in teaching fine arts, among which educational tasks are in the foreground. After all, the solution of educational tasks forms the level of artistic and creative consciousness of the student, determines the level of his inclusion in global cultural and creative processes. Considering the above, it is important to cultivate high aesthetic ideals in students, to form the needs and abilities for artistic comprehension of the world. Through targeted acquaintance of students with works of art, it is possible to achieve an increase in the aesthetic heritage of the people, their way of life, customs. After all, art is not only paintings in museums, images on the walls, carved boxes, art is a means of expressing feelings and emotions directed towards creativity. During creativity, the personality is filled with imagination and fantasy, it creates with inspiration, guided by intuition. In this process, the result is more important, since a state of special moral spiritual uplift, self-affirmation of the personality is created.

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Forms And Methods Of Developing Independent Thinking In Teaching Reading In Primary Schools

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Abstract
The development of independent thinking skills in primary school pupils is a crucial aspect of modern education, particularly in the context of teaching reading. This article explores the various forms and methods that can be effectively employed to nurture independent thinking during reading lessons. It discusses interactive, student-centered approaches such as reproductive, heuristic, creative and active learning methods.
Keywords: independent thinking, primary education, reproductive method, heuristic method, creative method, active learning methods.

Formation of a functionally literate personality is one of the priorities of the modern school education system. Such literacy implies not only acquisition of knowledge, but also the ability to effectively apply it in life situations.

The foundations of functional literacy are laid at the stage of primary education. At this stage, pupils form language and speech competencies through targeted and systematic exercises in various types of speech activity - reading, writing, speaking and listening.

In this regard, reading literacy occupies a special place in the system of training primary school pupils as comprehensively mature individuals and is considered one of the main academic subjects. Reading literacy includes not only reading technique, but also higher cognitive actions, such as understanding, analysis, response to what has been read and drawing conclusions.

Methods of teaching reading in primary school are aimed at developing and reinforcing reading skills in pupils. Scientific and theoretical analysis shows that some methods used in the reading process play an important role in increasing the effectiveness of learning. In particular, the following three methods are considered the most effective:

1. Reproductive method (including continuous reading). This method is aimed at processing and consolidating the existing knowledge and skills of pupils. Thanks to continuous reading, pupils develop the skills of accurate, fast and expressive reading. In this process, the reader receives a ready-made text and forms an understanding based on it.

In the process of teaching reading in primary grades, the reproductive method helps pupils to correctly master speech and grammatical structures, and to consolidate skills through imitation and repetition of a reading sample. This method involves offering pupils a sample of learning activity, understanding it and applying it to their own speech. In the context of reading, such activity often involves imitation of phonetic, lexical and intonational forms of reading presented by a teacher or native speaker.

The reproductive method relies primarily on the mechanisms of repetition and imitation. These mechanisms ensure the assimilation of language material on a functional basis, its use in speech practice and the development of language motor skills. With the help of this method, pupils develop not only reading aloud skills, but also the ability to understand hearing, visual perception, rhythm, intonation and the general logical and artistic integrity of the text.

In the process of teaching reading, the reproductive method pursues the following main goals:

• Formation of correct pronunciation skills - teaching phonetically correct and smooth pronunciation of words;

• Development of intonation features of speech - clear transmission of meaning with the help of correct intonation in words and sentences;

• Formation of automated reading aloud - reading words and sentences through a speech reflex;

• Development of auditory and visual perception of the text - ensuring a deep understanding of the content of the text based on the mechanisms of multichannel perception.

Practical forms of the reproductive method

This method can be used in various lesson formats:

• "Echo reading": the pupil repeats the text aloud after the teacher or audio recording. This is an effective method of teaching by imitating pronunciation and intonation.

• Choral reading: the whole class reads the text aloud at the same time, which helps to develop speech tempo and voice expression.

• Role-playing reading: used when reading dialogic texts and serves to form the emotional expression and speech image of pupils.

• Paused reading: the teacher stops the reading process at certain points, checks content understanding and activates dialogue through questions and answers.

• Reading to the soundtrack: synchronously reading the text with the audio recording, combining the auditory and visual channels, implementing multi-sensory learning activities" [1].

The heuristic method (from the Greek heurisko – "find", "discover") is a teaching method in which the pupil independently, through active mental activity, "discovers" new knowledge. This method, unlike the reproductive method, is based not on obtaining ready-made information, but on stimulating the pupil's curiosity and mental activity. The teacher, in turn, creates favorable conditions for research activities and performs a guiding function.

The use of the heuristic method in the process of teaching reading gives a number of important results:

• forms a stable interest in reading in pupils;

• develops the ability for analytical and critical thinking;

• forms the skills of deep understanding and perception of the text read.

The main methods of the heuristic method:

1. Working with the title of the text - pupils guess the content of the text from the title.
2. Predicting the plot - after reading a certain fragment of the text, pupils independently guess how events will develop.
3. Identifying contradictions - encourages pupils to analyze by asking questions: "Why did the hero act this way?", "Could he have acted differently?"
4. Contextual analysis of vocabulary - focusing on understanding new words not from the dictionary, but through the context of the text.
5. Organizing discussions and debates - increasing learning activity and encouraging re-reading by holding mini-debates and discussions of the content of the text.

The creative method is a teaching method that encourages the pupil to actively work with the text, to show fantasy, imagination and personal attitude. When using this method, the pupil does not receive ready-made information, but processes it based on his own creative views. "The creative approach is aimed at developing artistic thinking, speech, aesthetic feeling and personal perception." [2] The main goal of the creative method is to form an individual

attitude to the text, personal influence and creative self-expression in the pupil.

Forms of using the creative method in teaching reading:

1. "Artistic retelling is not just retelling the content, but a story that conveys the characters' feelings and their personal attitude to what is happening.
2. Role-playing and dramatization is bringing dialogues to life, distributing roles according to the text and performing them on stage.
3. Continuing or completing the text is writing further development of the text, offering an alternative ending.
4. Creating an illustration is depicting characters, events, scenes or a book cover.
5. Poetic retelling is translating a prose text into poetic form.
6. Collective creative writing is the joint creation of a story, fairy tale, or novella in a group."[3]

Currently, active teaching methods aimed at developing functional literacy, critical thinking of pupils, and preparing them for independent work are acquiring special significance in primary education. They ensure active acquisition of knowledge by pupils, an increase in their intellectual potential, and active participation in the educational process.

The most common methods of active learning are:

Keyword guessing is one of the methods of active learning that helps to arouse interest in reading, increase intellectual activity and deepen understanding of the literary text. This method is widely used in reading lessons and extracurricular literary activities.

The essence of this method is that before reading the text, the teacher offers students several key words or phrases related to the content of the work. Based on these words, students make assumptions about the topic of the text, characters, order of events and genre. This process is often carried out in pairs or small groups.

Stages of the method application:

Selecting keywords:

The teacher selects 2-6 key words or phrases related to the content of the work (e.g., setting, characters, important objects).

Formulating predictive questions:

For example:

– What do you think this story might be about?

– What events might happen?

– Who might be the main character of the work?

Discussion in class or in pairs:

Pupils can express their assumptions in the form of clusters, diagrams, stories, or oral presentations.

Reading the text:

Pupils read the work and compare their assumptions with the actual content.

Reflection

The teacher deepens the reflection by asking questions:

– Were your assumptions correct?

– What unexpected event happened?

– Why did the author choose these particular words?

As one of the active teaching methods for developing pupils' reading competencies, the method of directed listening and observation occupies a special place. This method encourages pupils not only to listen or read the text, but also to consciously analyze it, delve into the essence of events, empathize with the feelings of the characters and form their own opinions.

Stages of guided listening:

1. Setting a goal before listening

The teacher asks the pupils a specific question or task.

For example:

– "When listening to a piece of writing, pay attention to the hero's feelings."

– "When listening to a story, try to understand why the hero acts this way."

2. Listening/reading the text
The teacher reads the text in an expressive voice. The students listen attentively or read in a whisper.
3. Observation and analysis
After listening to the text, the teacher organizes a discussion using questions.
– "How did you understand the hero's feelings?"
– "What would you do if you were in this situation?"
– "How did the author describe this event?"
The discussion can be in written or oral form.
The observation method encourages the pupil to consciously perceive the text they read, reflect on the characters' actions, understand the essence of events and connect them with their personal lives. This method encourages pupils to think empathically, reflect on human values and draw conclusions.
Observation stages:
1. Pause for silence and reflection
After reading the text, the teacher gives pupils time to reflect in silence.
For example:
– "Close the book. Stop and think for a moment..."
– "What feelings did this event evoke in you?"
2. Questions for internal and external reflection
– What did you feel?
– What place impressed you?
– How would you act if you were a hero?
– What did you learn from this event?
3. Expression of personal attitude
Pupils express their thoughts and feelings orally or in writing.
Forms:
– Notebook entry;
– Mini-essay;
- An open statement or expression on the "thought wall".
Directed reading method. This method allows pupils to focus and direct their own reading. Pupils read independently, looking for answers to pre-set questions, pausing and discussing each paragraph after reading.
Guided reading is a method of organizing experiential or comprehension-based reading in which the teacher:
1. Identifies the purpose of reading/key question for presentation;
2. Chooses guiding questions to help students focus on a specific idea or thought in a given area;
3. Pauses during reading and discusses what they have read;
4. Provides opportunities for deep analysis and conclusions at the end of the lesson.

Stages of directed reading

Step	Activity	Purpose
1. Before reading (provocation)	Reference to basic knowledge, goal setting, title, guess based on illustrations	Preparing pupils for content
2. During the reading (focus)	Read paragraph by paragraph, stop, look for the answer to the question	Focused acquisition of knowledge
3. After reading (conclusion)	Analysis, formation of the main idea, conclusion	Strengthen understanding and generalization

In conclusion, fostering independent thinking in the process of teaching reading at the primary school level is not only necessary but fundamental for the holistic development of young learners. The ability to think independently allows pupils to analyze texts critically, question ideas, make connections with real-life experiences, and express their own viewpoints confidently.
Effective implementation of various forms and methods such as reproductive, heuristic, creative, and active learning

methods can significantly enhance pupils' cognitive engagement and autonomy in the learning process. These approaches not only improve reading comprehension but also nurture essential life skills such as creativity, logical reasoning, and decision-making.

Teachers play a vital role in designing learning environments that promote exploration and inquiry. Therefore, professional development, resource support, and the integration of innovative pedagogical strategies are key to successfully cultivating independent thinking among primary school readers.

By embedding independent thinking into reading instruction from the early years, we lay the foundation for lifelong learning and responsible, thoughtful citizenship.

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Linguistic Variations In Social Media And The Digital Environment: A Study On Contemporary Language Practices

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Abstract
The rapid expansion of social media platforms and the digital communication sphere has significantly transformed contemporary language use, particularly in multilingual societies. This study investigates how linguistic practices manifest and evolve on platforms such as Twitter, Instagram, and Telegram, focusing on phenomena such as abbreviations, informal orthography, emoji substitution, code-switching, and transliteration. Drawing on a mixed-methods approach, the research analyzes over 1,000 public user posts and incorporates survey data from 150 active social media users in Uzbekistan. The results reveal a dynamic hybridization of language, driven by technological affordances, platform-specific norms, and users' social identities. Informal expressions, multilingual blending, and creative spellings emerge as defining features of digital discourse, reflecting a broader shift in communication behavior across generational and linguistic lines. These findings contribute to the growing field of digital sociolinguistics and carry important implications for language education, discourse analysis, and digital media literacy in a rapidly globalizing context.
Keywords: digital communication, social media, language variation, emoji, code-switching, digital linguistics.

Introduction:

Language is not merely a vehicle for conveying information—it is a dynamic, adaptive system that continuously evolves alongside society. As human communication habits have shifted due to technological advancements, particularly with the advent of the internet and social media, language has undergone profound transformations. These changes are not superficial; they affect structure, vocabulary, grammar, and even the socio-cultural meanings attached to words and expressions.

Social media platforms such as Twitter, Instagram, Facebook, and Telegram have redefined how people express themselves. In these spaces, communication often prioritizes brevity, immediacy, and creativity. Users craft their messages using abbreviations, acronyms, symbols, and various forms of internet slang. Entire thoughts can be conveyed with a handful of characters, and meanings are often shaped as much by tone and cultural context as by syntax and semantics.

One of the most notable linguistic phenomena emerging in this digital landscape is code-switching—the practice of alternating between two or more languages within a single conversation or even sentence. In multilingual societies such as Uzbekistan, where Uzbek, Russian, and English coexist and frequently interact, this linguistic flexibility is especially prevalent. Code-switching in digital communication is often not accidental; it serves as a reflection of identity, cultural hybridity, and social belonging. In this regard, online language use can offer valuable insights into the sociolinguistic dynamics of a society.

The digital environment has also led to the development of what might be termed "digital dialects"—forms of language specific to online contexts that may deviate from standard grammatical norms yet remain widely understood among users. This raises important questions: Are digital

platforms reshaping the fundamental nature of language? Do these new modes of expression dilute linguistic standards, or do they represent a legitimate evolution driven by context and necessity?

This study aims to explore these questions by analyzing language use in social media within the Uzbek context. By examining user behavior across multiple platforms and incorporating qualitative survey data, the research seeks to uncover how linguistic forms are shaped by digital interaction, and what this implies for language use in both informal and formal domains. Rather than viewing digital communication as a threat to linguistic integrity, this paper considers it a window into the adaptive capabilities of language and a reflection of the complex social realities of its users.

Literature Review

The intersection of language and digital technology has evolved rapidly over the past decade, as digital platforms increasingly shape how individuals produce, perceive, and interact through language. While early studies established the theoretical foundations of digital discourse, recent scholarship focuses on the social dynamics, platform specificity, and emerging linguistic norms of communication in networked environments. Contemporary research now views digital language use as an adaptive and context-sensitive phenomenon rather than a distortion of standard linguistic systems. Jones et al. (2022)[1] argue that digital communication reflects "layered literacies," where users navigate multiple modes (text, image, hyperlink, voice) simultaneously, constructing meaning dynamically within technological constraints. This framework aligns with the current study's focus on hybrid language patterns and informal expression on platforms like Telegram and Instagram.

One of the most active fields in recent digital linguistics is platform-based language differentiation. Georgakopoulou (2021)[2] emphasizes that each social media platform fosters its own "small stories" and stylistic norms, influenced by the platform's affordances (e.g., post length, visual emphasis, ephemeral content). For example, while Twitter encourages brevity and abbreviation, Instagram supports multimodal storytelling, and Telegram facilitates extended, group-oriented textual interaction. These differences are mirrored in the present study's comparative analysis of platform-based language use among Uzbek users.

Moreover, code-switching in digital settings has evolved from being viewed merely as a pragmatic tool to being understood as a socially and ideologically loaded practice. Spilioti and Tagg (2023)[3] explain that multilingual digital users often engage in strategic code-switching to signal identity, in-group membership, or emotional nuance. In the Uzbek context, as the current data reveals, switching between Uzbek, Russian, and English functions not only to enhance clarity but also to project cosmopolitanism and generational alignment, particularly among younger users.

Another emergent area of inquiry is digital language innovation and creativity, especially in informal online contexts. Tagg and Seargeant (2020)[4] note that language on social media is increasingly shaped by user creativity, humor, and symbolic play—an insight especially relevant to the frequency of hybrid word forms, playful spellings, and adapted scripts (e.g., Latinized Uzbek with Cyrillic insertions).

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These innovations are not random but reflect shared cultural reference points and group identities.

Visual and symbolic elements, while excluded from the formal analysis of this study, still represent a vital component of modern digital discourse. Danesi (2020)[5] explores how emojis and typographical manipulation (e.g., CAPS, asterisks for emphasis) act as semantic markers. Their absence in this paper's primary data reflects a focus on structural linguistic elements, though their role in digital literacy remains acknowledged as part of broader communicative competence.

Finally, regional studies from Central Asia are beginning to document the localized features of digital communication. Research by Turaeva (2022)[6] and Ibragimova (2023)[7] on Uzbek-speaking communities illustrates the emergence of "digital Uzbek" as a distinct variety marked by translanguaging, borrowed lexicon, and abbreviated syntax. These findings affirm the importance of studying digital language use within its specific sociolinguistic and cultural context, an approach adopted in the present study.

In summary, the recent literature situates digital language as a complex, socially embedded, and rapidly evolving phenomenon. Rather than viewing online discourse as linguistically deficient, scholars now recognize it as a rich site of innovation, identity work, and expressive experimentation. This theoretical shift underpins the rationale for this paper's investigation into the linguistic landscape of Uzbekistan's digital media users.

Methods:

This research adopts a mixed-methods approach, combining both quantitative and qualitative tools to investigate how language is used and adapted within digital environments in Uzbekistan. The study is grounded in the belief that neither numbers alone nor individual narratives can fully capture the complexity of linguistic behavior online. Therefore, both statistical data and user perspectives were considered essential to explore how social media affects language forms, especially in a multilingual setting.

To gather empirical evidence, two primary methods were used: content analysis of public social media posts and a survey of active social media users. The content analysis focused on a dataset of 1,000 posts collected from Instagram, Twitter, and Telegram over a four-month period between January and April 2025. These platforms were selected due to their popularity among young adults in Uzbekistan and their high levels of linguistic variation. Only publicly accessible posts were considered, and special care was taken to ensure anonymity and ethical use of data.

The posts were selected purposively based on specific linguistic characteristics. These included signs of code-switching (i.e., mixing Uzbek, Russian, and English within the same message), use of internet-specific abbreviations and slang, informal grammatical constructions, and instances of transliteration or non-standard spelling. Each post was manually coded and categorized according to these features, allowing for a frequency-based overview as well as pattern recognition across platforms.

To complement the content analysis, an online survey was conducted with 150 respondents aged 18 to 35, reflecting the demographic most active on social media. The survey aimed to capture users' self-

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[6] Turaeva, D. (2022). *Code-switching and identity construction in Uzbekistani social media*. Language in Society, 51(4), 567–588.
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reported linguistic behavior, including their awareness of informal digital language, frequency of code-switching, and attitudes toward using non-standard expressions in online settings. It also included open-ended questions to provide deeper insight into personal motivations and contextual language choices.

The analysis of the collected data followed two main directions. Quantitative data from the social media sample and survey responses were processed to identify prevalent linguistic practices, with attention to frequency and platform-specific differences. Meanwhile, the qualitative components—particularly the open-ended survey responses—were analyzed thematically, drawing out common themes related to identity, creativity, and communication norms in the digital space.

While the study provides valuable insights into current trends in digital language use, certain limitations must be acknowledged. The data collection was limited to text-based content, excluding voice or video messages that may contain further linguistic complexity. Additionally, the focus on younger users, though intentional, means that the findings may not reflect language behavior across all age groups. Finally, due to the ethical constraints of data collection, only public posts were included, which may not fully represent private or group-based communication styles.

Despite these limitations, the methodological approach adopted in this study provides a rich and multi-faceted understanding of how language operates in the context of social media in Uzbekistan. By bridging observable linguistic trends with user-reported practices and attitudes, the study aims to contribute both theoretically and empirically to the growing field of digital sociolinguistics.

Results

The findings of this study reveal a number of recurring linguistic features across social media platforms frequently used in Uzbekistan. The data confirms that digital communication encourages hybrid, informal, and multilingual language behavior. These trends are evident in both the content analysis and the survey responses, offering a coherent picture of the evolving linguistic landscape in the digital sphere.

A central observation is the widespread use of code-switching, especially between Uzbek and Russian. Out of 1,000 analyzed public posts, approximately 25.5% contained Uzbek-Russian code-switching, while 13.5% involved Uzbek-English switching. These switches were often contextually motivated—used for stylistic emphasis, signaling group identity, or integrating culturally specific expressions. Such usage was particularly prominent on platforms like Telegram and Instagram, where users often blend languages informally and fluidly.

Another significant feature was the use of internet-specific abbreviations and slang, appearing in 46% of the sampled posts. Common expressions included internationally recognized acronyms such as *LOL*, *IDK*, and *OMG*, as well as localized slang terms written in Latin transliteration (e.g., *zôr*, *gap yôq*). Instagram and Telegram posts exhibited the highest frequency of such informal expressions, reflecting their predominance among younger, urban user bases.

Informal spelling and visual stylization (such as letter repetition, use of mixed case, or phonetic spellings) appeared in 31% of posts, predominantly on Instagram. These stylistic choices often served to convey tone, exaggeration, or emotional intensity in the absence of non-verbal cues.

Additionally, transliteration practices, where users alternated between Latin and Cyrillic scripts, were noted in 18% of the data, especially on Telegram and Twitter. This practice was influenced by platform

defaults, device keyboards, and users' personal habits.

To provide a clear summary of these observed trends, the following table presents the frequency, relative percentage, and platform distribution of the key linguistic features identified in the study:

Table 1. Linguistic Features Observed in Social Media Posts

Linguistic Feature	Frequency (n = 1000)	Percentage (%)	Most Prevalent Platforms
Code-switching (Uzbek–Russian)	255 posts	25.5%	Telegram, Instagram
Code-switching (Uzbek–English)	135 posts	13.5%	Instagram, Twitter
Abbreviations / Internet slang	460 posts	46.0%	Instagram, Telegram
Informal spelling / stylization	310 posts	31.0%	Instagram
Transliteration (Latin/Cyrillic)	180 posts	18.0%	Telegram, Twitter
Emotionally expressive writing	370 posts	37.0%	Instagram

As indicated in Table 1, abbreviations and internet slang constitute the most dominant linguistic strategy across platforms, followed by emotionally expressive writing and various forms of code-switching. These trends were reinforced by survey data, where 57% of respondents reported intentionally using slang to appear humorous or relatable in online interactions. Furthermore, 62% of respondents acknowledged that digital language had influenced their offline communication, with internet-born expressions and abbreviations increasingly integrated into their spoken language.

Overall, the results illustrate how social media platforms function as both mirrors and engines of linguistic change. They reflect broader sociolinguistic realities—such as multilingualism and generational identity—while also enabling the emergence of new, context-sensitive norms of expression.

Discussion

The findings of this study underscore the transformative role that digital communication plays in shaping language practices in multilingual societies such as Uzbekistan. In line with earlier studies (Tagg, 2015; Androutsopoulos, 2011), the data presented here confirm that social media is not merely a platform for informal interaction but a dynamic space where language norms are negotiated, challenged, and reconstructed.

One of the most salient observations is the strategic use of code-switching, which reflects more than just linguistic convenience—it signals cultural alignment, social belonging, and digital identity. The high frequency of Uzbek-Russian and Uzbek-English switching suggests that users leverage multilingual resources to convey specific tones or to address diverse audiences. This echoes the idea that digital multilingualism is a form of linguistic capital, where choosing the “right” language—or combination of languages—can enhance social presence or relatability online.

Similarly, the widespread use of abbreviations, internet slang, and informal stylizations points to the growing autonomy of digital discourse as a genre. Unlike traditional writing norms, online language permits—and even encourages—creativity, phonetic spellings, and non-standard grammar. This informal register is not random but is governed by its own implicit rules, shaped by shared user practices, memes, and evolving trends. The survey responses further suggest that users are not only aware of these informal norms but deliberately adopt them to align with online community expectations.

Of particular interest is the observation that digital language features are migrating into offline communication. This shift illustrates how digital discourse is beginning to

influence not only how people write but also how they speak and conceptualize language in everyday life. The use of social media slang, catchphrases, or even emoji substitutes in oral communication indicates a gradual blending of digital and physical language spheres, a trend that warrants further ethnographic attention.

The platform-specific differences identified in the analysis also merit discussion. Instagram appears to foster expressive and emotionally loaded language, in part due to its visual orientation and youth-centric user base. Telegram, by contrast, supports more varied linguistic styles depending on the context—ranging from humorous memes to informative public channel updates. Twitter, constrained by character limits, encourages linguistic efficiency yet still accommodates multilingual and stylistic variation. These findings highlight the importance of platform ecology in understanding digital language behavior: the technological and social affordances of each platform shape not only what users say but how they say it.

Finally, the results point to a broader process of language evolution in digital society. While some may view informal digital writing as a degradation of language norms, this study aligns with perspectives that see it as a site of innovation. Rather than threatening linguistic integrity, social media opens up new avenues for expression, identity performance, and linguistic creativity. In the case of Uzbekistan, it also reveals how global linguistic influences—particularly English—are being locally appropriated and reshaped in culturally meaningful ways.

In summary, the digital environment acts as both a mirror and a laboratory for contemporary language change. It reflects existing social dynamics—such as multilingualism, generational shifts, and globalization—while also offering a space where users actively experiment with and redefine language norms. These processes underline the importance of studying digital discourse not in isolation, but as a vital component of modern sociolinguistic reality.

Conclusion

This research has explored how digital communication—particularly on social media platforms—reshapes linguistic practices in a multilingual context such as Uzbekistan. From the outset, the study positioned language as a socially and technologically dynamic system, constantly evolving in response to cultural shifts and digital affordances. Against this backdrop, the digital sphere was conceptualized not merely as a communication tool, but as a linguistic ecosystem where traditional boundaries of grammar, orthography, and language separation are frequently renegotiated.

The findings confirmed that social media users in Uzbekistan engage in a variety of distinctive language behaviors. The prevalence of code-switching, especially between Uzbek, Russian, and English, illustrates a deep interplay between language and identity. Such switching is not arbitrary; rather, it reflects a conscious or habitual strategy to align with particular social groups, communicate more effectively, or add rhetorical nuance. The use of abbreviations, internet slang, and phonetic spellings further signals the emergence of a digital register—one that is governed not by formal grammatical rules but by community-based norms, creativity, and immediacy.

Moreover, the frequent appearance of transliteration (Latin–Cyrillic) and informal stylization (elongated letters, nonstandard punctuation, etc.) suggests that online users freely adapt writing conventions depending on context, platform, or audience. Platforms like Instagram, Telegram, and Twitter were found to foster distinct styles of language use, shaped by their technical features and user expectations. This supports the broader

idea that platform-specific discourse norms are becoming a central aspect of digital sociolinguistic variation.

Crucially, the study also revealed that these online linguistic practices are beginning to influence offline communication patterns. Survey respondents reported incorporating digital slang, abbreviations, and even syntactic patterns into everyday speech, especially among younger users. This indicates a blurring of boundaries between digital and physical modes of interaction, raising important questions about how language change is internalized and propagated beyond screens.

Taken together, the results affirm that digital platforms serve both as mirrors and engines of linguistic change. They reflect existing sociolinguistic realities—such as multilingualism, globalization, and generational divides—while simultaneously accelerating the development of new norms, expressions, and communicative strategies. In doing so, they offer fertile ground for linguistic innovation, identity performance, and hybridization.

From a theoretical standpoint, this research contributes to ongoing debates in digital sociolinguistics, highlighting the role of context, audience, and platform in shaping language use. Practically, it provides insights for educators, language planners, and media professionals who seek to understand the evolving nature of public discourse, especially in societies characterized by linguistic diversity and rapid technological adoption.

Future research could build on these findings by adopting longitudinal or ethnographic methods to investigate how these digital language trends evolve over time and influence language attitudes, intergenerational communication, and even literacy practices. As social media continues to mediate everyday life, understanding its impact on language will remain not only relevant but essential.

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Message from the Editor-in-Chief

Prof. Chinedu M. Ogundele

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Each manuscript submitted and published represents a valuable voice in the ongoing global academic dialogue. We thank you for choosing TLEP as the platform to share your original ideas, insightful analyses, and rigorous research.

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With sincere thanks and best regards,
Prof. Chinedu M. Ogundele
Editor-in-Chief
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