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ARTISTIC FEATURES OF THE MONUMENTAL PAINTINGS OF PEOPLE'S ARTIST OKTAY SHIKHALIYEV

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ХУДОЖЕСТВЕННЫЕ ОСОБЕННОСТИ МОНУМЕНТАЛЬНЫХ ЖИВОПИСНЫХ ПРОИЗВЕДЕНИЙ НАРОДНОГО ХУДОЖНИКА ОКТАЯ ШЫХАЛИЕВА

Abstract.

The article examines the artistic features of the monumental paintings of People's Artist of Azerbaijan Oktay Shikhaliyev, one of the first professional monumental artists in Azerbaijan. Special attention is given to the analysis of his creative activity in the context of the development of Azerbaijani visual art in the 1960s.

It is noted that O.Shikhaliyev actively participated in the artistic decoration of public buildings such as cultural centers, schools, metro stations, restaurants, cafes, and the city circus. In his monumental works he skillfully combined fresco painting, mosaic, ceramics, and other decorative materials. His works are characterized by a decorative style, rich color solutions, carefully constructed compositions, and a harmonious connection with architectural space.

The article analyzes several of the artist's monumental works, including the panel "Peace, Labor, Freedom, Equality, Brotherhood and Happiness" (1961), the decoration of the "Children's World" department store (1963), frescoes in the "Novbahar" restaurant (1964), the mosaic composition in the "Mother and Child" café (1965), and the mosaic panel "Towards the Stars" (1968). Despite the influence of Soviet ideology, the artist incorporated elements of national culture into his compositions, such as traditional ornaments, carpet motifs, and miniature-style details.

The study concludes that the monumental-decorative creativity of Oktay Shikhaliyev occupies an important place in the history of Azerbaijani art. His works became part of the urban artistic environment and played a significant role in shaping public aesthetic taste.

Аннотация.

В статье рассматриваются художественные особенности монументальных живописных произведений народного художника Азербайджана Октая Шыхалиева, одного из первых профессиональных мастеров монументально-декоративного искусства в Азербайджане. Особое внимание уделяется анализу его творческой деятельности в контексте развития азербайджанского изобразительного искусства 1960-х годов.

Отмечается, что О.Шыхалиев активно участвовал в художественном оформлении общественных зданий - домов культуры, школ, станций метро, ресторанов, кафе, цирка и других архитектурных объектов. В его монументальных работах органично сочетаются фресковая живопись, мозаика, керамика и другие декоративные материалы. Его произведения характеризуются декоративностью, насыщенным колоритом, продуманной композицией и гармоничным взаимодействием с архитектурной средой.

В статье анализируются такие произведения художника, как панно «Мир, Труд, Свобода, Равенство, Братство и Счастье» (1961), оформление магазина «Детский мир» (1963), фрески ресторана «Новбахар» (1964), мозаичная композиция кафе «Мать и ребёнок» (1965), а также панно «К звёздам» (1968). Отмечается, что, несмотря на влияние советской идеологии, художник стремился включать в свои композиции элементы национальной культуры - орнаменты, мотивы коврового искусства и миниатюрной живописи.

В результате исследования делается вывод о том, что монументально-декоративное творчество Октая Шыхалиева занимает важное место в истории азербайджанского искусства. Его произведения стали частью художественной среды города и сыграли значительную роль в формировании эстетического вкуса общества.

The 1960s are remembered in Azerbaijani visual art as a period marked by the emergence of a new generation of artists. During this time, People's Artist Oktay Shikhaliyev held a special place among the painters who worked consistently in both easel and monumental painting. His signature can be seen in the artistic decoration of many public buildings across the republic, including cultural centers, schools, metro stations, restaurants, cafés, the city circus, and other architectural spaces. As the head of the decorative and applied arts section of the Artists' Union, he put forward important initiatives for the development of Azerbaijani monumental-decorative art and played a significant role in attracting young artists to this field.

Oktay Shikhaliyev, one of the first professional monumental artists of Azerbaijan, was born in September 1931 in the city of Baku. The ancient everyday traditions of the Absheron Peninsula, old residential houses, attractive nature, bright sun, the ever-changing views of the Caspian Sea, and the landscapes shaped by the winds played an important role in forming his worldview and influencing his future professional choice.

After graduating from the Art School with honors in 1952, Oktay Shikhaliyev's dedication to art took him to Saint Petersburg (formerly Leningrad). In the same year, he entered the V. Mukhina Higher School of Art and Industry, where he received systematic training in monumental-decorative art, applied art forms, ceramics, and mosaic techniques. By working in the studios of well-known Russian artists, he enriched both his artistic-technical skills and theoretical knowledge. After successfully graduating from the institution in 1958, O. Shikhaliyev returned to his native Baku and soon began actively participating in the artistic decoration of public buildings in different regions of the republic. Even during his student years, he successfully participated in various exhibitions and attracted attention in 1957 when he was awarded the first prize in decorative art at the All-Union Youth Exhibition Festival.

In his monumental works, Oktay Shikhaliyev skillfully used not only fresco painting but also mosaic, tiles, and other decorative materials. Although the main direction of his creativity was connected with monumental-decorative art, the artist also worked in different genres of visual art. His diverse activity included portrait and landscape compositions in easel painting, poster design, decoration of vases and plates, small thematic panels, as well as experiments in ceramics and metal casting. Nevertheless, monumental painting and decorative compositions remained the main focus of his creativity. His painting style is distinctly decorative and is based on the emotional expressive possibilities of color.

One of the first important examples of the artist's monumental creativity is the panel titled "Peace, Labor, Freedom, Equality, Brotherhood and Happiness," created in 1961 for the boarding school in the city of Ganja. As the title suggests, the ideological content of the work is based on the promotion of ideas of peace, friendship, and brotherhood. In the context of Soviet ideology, the glorification of unity, friendship, and brotherhood among all peoples, as well as the depiction of workers struggling for peace, was one of the main directions in the creativity of artists.

In this work, O. Shikhaliyev created a large composition that combines the idea of peace with the motifs of labor, freedom, equality, and brotherhood. The panel skillfully unites images of people from different professions, workers, symbols of peace, and scenes that express the idea of a happy future. This monumental work was created in collaboration with another monumental artist, A. Agamalov. One of the main advantages of the work is the artistic expression of actual social ideas on a large architectural surface of the school's façade.

In 1963, the artist, together with Huseyn Rajabov, carried out the artistic decoration of the "Kid world" department store in Baku. The three large interior walls of the store were decorated with paintings depicting various scenes from the everyday life of children. The general idea of the compositions was devoted to the theme of peace, in accordance with the slogan "Let the Sun Always Shine."

The authors presented the idea of peace through the eyes of children, using a "childlike language," portraying children as the carriers of sunlight, brightness, joy, and hope as the future generation. In this composition, children are presented as the guardians of peace and the owners of tomorrow, while the image of the sun symbolizes both the continuity of life and positive energy and optimism. This monumental composition stood out for its high artistic quality in accordance with the artistic requirements of its time and for many years was remembered as a successful example of monumental decorative design.

One characteristic feature of Oktay Shikhaliyev's monumental panels is that, alongside themes reflecting Soviet ideology, the works also include motifs referring to the distant past and national roots. In monumental artworks of the Soviet period, the prominent presence of Lenin's image and symbols representing communist ideology was largely determined by political requirements. However, despite these limitations, O. Shikhaliyev attempted to bring a national spirit into his compositions by incorporating national ornaments, carpet motifs, and details inspired by miniature painting.

Among the monumental decorative works created by the artist together with Huseyn Rajabov, special mention can be made of the lyrical frescoes on the walls of the "Novbahar" restaurant in Baku in 1964, the mosaic composition created in the "Mother and Child" café in 1965, and the monumental scenes decorating the foyer of the Baku Circus in 1968. In these compositions, scenes of everyday life, motifs of celebration and leisure, as well as elements related to sports and circus art are presented both in decorative and narrative forms. The sensitivity in the use of color and form, as well as the precise application of compositional principles, demonstrates that the artists had a deep understanding of the technical and artistic subtleties of monumental-decorative art.

The 1960s can be considered the most intensive period of Oktay Shikhaliyev's activity as a monumental artist. During these years, he constantly searched for

new solutions in terms of form, material, and ideological content. He was inclined toward experimentation and did not hesitate to start again when he was not satisfied with the result.

One of the successful results of these creative searches is the mosaic panel titled "Towards the Stars," created in 1968 on the facade of the new building of School No. 18 in Baku. In this composition, which reflects cosmic space, the figures of a young boy and girl holding a space device in their extended hands are depicted as if ready to fly toward the sun, the stars, and the infinite universe. The central idea of the composition is the concept that knowledge and science lead humanity "toward the stars." In this work, the artist connects the romantic image of cosmic space with the importance of education and science, creating a logical connection between the functional purpose of the school building and the ideological theme of the panel. The dynamic plasticity of both figures, the constructive use of color, and the volumetric solution that harmonizes with the surrounding environment clearly reveal O. Shikhaliyev's professional monumental thinking. Unfortunately, some of these works have been dismantled over time for various reasons, and like many monumental artworks that once decorated the urban environment, they have been lost.

Another successful work by O. Shikhaliyev is the monumental panel created in 1969 for the interior of the Bilajari locomotive depot station in the Azerbaijani railway system. In this complex multi-figure composition, the free and joyful labor of Soviet people is glorified. The flag of the Soviet state, the portrait of Lenin, images of labor heroes, and scenes reflecting the rhythm of production are united within a single compositional system. The main idea of the work is the celebration of happy and creative labor, as well as economic and social achievements. The composition is perfectly connected with the interior architecture of the building, and the clarity of the plot line and the completeness of the images form the main artistic qualities of the work.

Oktay Shikhaliyev can truly be described as a hardworking and dedicated artist. He was constantly active, participating in republican and all-Union exhibitions, attending meetings of various artistic councils, and traveling to different regions and foreign countries for creative missions. The high demands placed on the artistic design of public and industrial buildings in that period required artists to take great responsibility in everything from the selection of ideological themes to compositional solutions. The synthesis of monumental-decorative art with architecture was intended to create an artistic environment reflecting different aspects of the life of Soviet society.

In this context, architecture faced important challenges, ranging from the design of large ensembles to the artistic solutions of individual public buildings. Masters of monumental-decorative art had to skillfully use colored majolica, tiles, stained glass, wall ornaments, shabaka patterns, metal decorative elements, sculptural reliefs, large-scale decorative ceramic works, and other visual means. The synthesis of art and architecture created an "artistic environment" that influenced people both visually and ideologically, contributing to the formation of public aesthetic taste and enriching the spiritual world of individuals.

Conclusion. As a result, the monumental-decorative creativity of Oktay Shikhaliyev formed one of the leading directions in the history of Azerbaijani monumental art. Based on folk creativity, the rich heritage of national architecture, wall paintings, ornaments carved on wood and stone, carpet weaving, and examples of applied art, this artistic line gradually developed into a highly professional stage and made it possible to create works of art with strong spiritual and aesthetic impact.

The monumental works created as a result of the artist's artistic thinking have become part of public memory and have played a role in shaping the ideological and aesthetic taste of society. Many works bearing the signature of Oktay Shikhaliyev, located in hotel complexes, factories, streets and squares, as well as on the façades and interiors of schools and medical institutions in the city of Baku, have been dismantled over time for various reasons. Nevertheless, from an artistic point of view, they continue to preserve their significance and relevance.

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THE PORTRAIT GENRE IN THE CREATIVITY OF HONORED ARTIST TOGRUL SADIGZADE

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GATUNEK PORTRETU W TWÓRCZOŚCI ZASŁUŻONEGO DZIAŁACZA SZTUKI TOGRULA SADIGZADE

Abstract.

The article examines the portrait genre in the creative work of the Honored Artist Togrul Sadıgzade. The artist's life path, international artistic travels, and creative development are analyzed in order to understand his turn toward portrait painting. Sadıgzade's portraits go beyond physical resemblance, aiming to reveal the inner world, psychological state, and spiritual qualities of the individual. The study discusses his compositional structure, color palette, use of light and shadow, texture, and graphic line through selected examples. Works such as the "Portrait of Shovkat Alakbarova", "Mirza Alakbar Sabir", "Sattar Bahlulzade", and "Portrait of the Artist's Daughter" demonstrate his mastery in creating psychologically expressive images. The research concludes that Sadıgzade's portrait art represents a synthesis of realist traditions and modern artistic exploration in Azerbaijani painting of the second half of the twentieth century.

Streszczenie.

Artykuł poświęcony jest analizie gatunku portretowego w twórczości Zasłużonego Działacza Sztuki Togrula Sadıgzade. Na tle jego drogi życiowej, zagranicznych podróży artystycznych oraz poszukiwań twórczych omówiono przyczyny zwrócenia się artysty ku portretowi. Portrety Sadıgzade nie ograniczają się do wiernego oddania podobieństwa zewnętrznego, lecz dążą do ukazania świata wewnętrznego, stanu psychologicznego i wartości duchowych modela. W artykule przeanalizowano kompozycję, paletę barwną, światłocień, fakturę oraz rolę rysunku na przykładzie wybranych dzieł, takich jak Portret Szöwket Alakbarowej, Mirza Alakbar Sabir, Sattar Bahlulzade oraz Portret córki artysty. Wnioskiem jest stwierdzenie, że twórczość portretowa Sadıgzade stanowi syntezę tradycji realistycznych i nowoczesnych poszukiwań artystycznych w malarstwie azerskim drugiej połowy XX wieku.

Keywords: Togrul Sadıgzade, portrait genre, Azerbaijani painting, psychological portrait, composition, color palette, realism.

Słowa kluczowe: Togrul Sadıgzade, portret, malarstwo azerskie, portret psychologiczny, kompozycja, paleta barwna, realizm.

Introduction. The portrait genre in Azerbaijani visual art has developed in different directions across various historical periods. In the second half of the twentieth century, among the artists who combined the traditions of realist painting with modern artistic exploration, the Honored Artist painter Togrul Sadıgzade (1926–1995), occupies a distinguished place.

He received his education in the 1940s at the Azim Azimzade Art School. Despite the hardships of the Great Patriotic War, he remained devoted to art. Later, he studied graphic arts at the Surikov Institute in Moscow; however, due to difficult living conditions, he returned to Baku and continued his creative path there.

Beginning in the 1950s, the artist became known for his miniatures (including illustrations for Fuzuli's poem "Leyli and Majnun"), thematic compositions, and portrait works. From the 1970s onward, he turned more systematically to the portrait genre. His portraits do not merely aim to achieve physical likeness; rather, the artist seeks to convey the individual's inner world, psychological state, and spiritual beauty through artistic form.

From the 1950s onward, Togrul Sadıgzade participated in various international exhibitions and gained recognition for his miniatures illustrating Fuzuli's poem "Leyli and Majnun." His travels to different countries, including Algeria, Tunisia, Egypt, Greece, Paris, Italy, and other cities, greatly enriched his artistic imagination. In paintings such as "A Tunisian from the City of Gabès," "Desert Girls," and "Ancient Ruins," he masterfully reflected the yellowish tones of the Eastern and North African deserts, as well as the grey and misty hues of the landscapes of Greece and Paris.

In 1963, during a creative visit to Japan, the artist drew inspiration from the synthesis of technological advancement and traditional culture, producing dramatic works such as the triptych "Hiroshima," "Black Dragon," and "Do Not Die." In these works, a strong connection is established between subject matter, color,

and form, with dramatic intensity expressed through sharp color contrasts.

Alongside the influence of the above-mentioned travels, from the 1970s onward T. Sadıgzade developed a deeper interest in the portrait genre. He included in his artistic gallery portraits of friends, contemporary writers and poets, as well as historical figures who glorified Azerbaijani culture. In his portrait world appear images of spiritual ideals such as Nasimi, Naimi, Fuzuli, Babek, Uzeyir Hajibeyov, Muslim Magomayev, and his father Seyid Huseyn. Creating these portraits sincerely and wholeheartedly, the artist sought to study his subjects from within, making it his primary aim to reveal the richness of their psychological lives. Even simple subjects are transformed in his paintings into artistic reality and acquire aesthetic value, as the painter perceives everything through the prism of beauty.

Sadıgzade's portrait compositions demonstrate not only classical stability but also a sense of dynamism. He generally constructs centralized compositions; however, in some portraits, especially in his graphic works, he experiments with perspective and unusual angles.

The artist's perception of color is simple yet profoundly meaningful. Through a laconic use of tonal variations, he achieves a sincere and poetic effect: the harmonious balance between warm reds, yellows, and earthy tones and cooler shades of blue and green enhances the emotional atmosphere of the image. In his portraits, color primarily plays a leading role in the background and costume, while in modeling the human face greater emphasis is placed on subtle tonal transitions and the interplay of light and shadow. In watercolor works, he builds semi-transparent layers to create a lyrical atmosphere in both natural motifs and human features; in oil paintings, he increases the monumental impact of the image through thick layers of paint and sharp color contrasts.

In Sadıgzade's portrait works, composition is generally balanced and laconic. To emphasize the character of the model, he consistently favors a centralized compositional structure, reducing background elements and sometimes leaving them entirely conventional. By choosing a classical frontal or semi-profile viewpoint, the artist strengthens the psychological expressiveness of the depiction. In some portraits, still-life elements, such as a book, musical score, or decorative clothing, complement the composition and provide information about the subject's profession, status, or personal interests.

For example, in the "Portrait of Shovkat Alakbarova" (oil on canvas, approximately 1970s), the artist lyrically conveys both the personality and professional qualities of the performer. The female figure is depicted in a black dress, shown in a semi-profile pose, her gaze directed not toward the viewer but into the distance. The musical notes in her hand, along with the glass of water, carafe, and sheets of music placed on the nearby table, emphasize her connection to the art of music.

The painter balances the composition by creating a color contrast between the green tablecloth, the red

sofa in the background, and the dark clothing of the figure. The light source comes from the left, softly illuminating the woman's face and hands, which enhances the psychological depth of the portrait. Sadıgzade's brushstrokes are gentle, the contours simple, yet attentive to detail, successfully conveying Shovkat's noble and modest character.

The composition of the portrait is free yet stable; the body language of the figure conveys calmness and self-confidence, while the background remains simple and conventional. By rendering the sheets of music in her hand with soft contours, the artist emphasizes the natural connection between music and life. In addition to the subdued background and black dress, the golden bracelet and brooch at her neck appear as refined artistic details. This portrait fulfills the dual purpose of the genre, revealing both the external likeness of the model and her inner world.

As another example, one may refer to the portrait of the great representative of Azerbaijani satirical literature, "Mirza Alakbar Sabir," created in oil on canvas in the 1970s. Sadıgzade executed this work in a realist style. The poet is depicted in traditional national attire: wearing a black hat, a yellowish outer garment draped over his shoulders, a white shirt, and a striped belt tied over a black chukha. The open book in his hands alludes to his poetic and educational activities. The composition of the portrait is frontal and monumental; the figure occupies the entire canvas and appears to approach the viewer.

The artist creates a restrained and serious atmosphere by predominantly using olive, brown, and grey tones in his color palette. The light-and-shadow modeling plastically defines the poet's facial features, emphasizing his composed gaze and inner determination. The background is treated conventionally, with firm brushstrokes that bring the poet's figure to the foreground. In this portrait, a bridge is established between tradition and modernity: the historical costume, book, and decorative elements symbolize a connection to national culture, while the artist's realist style corresponds to the professional portrait tradition of the mid-twentieth century.

A sense of dynamism and rhythm is evident in his line work. In his pencil portraits, improvisational drawing and the rhythmic flow of patterned lines reveal the inner energy of the subject, while in oil paintings plasticity and rhythm are created through visible brushstrokes. For example, in his portrayal of his colleague, the prominent painter and graphic artist Sattar Bahlulzade (paper, pencil, 75 × 65 cm), he demonstrates how line and texture can be used expressively. The portrait, executed in pencil, is based on the sharp contrast between dark and illuminated areas. Bahlulzade's facial features are rendered with subtle modeling: shadows beneath the eyes, wrinkles on the cheeks, and the thinning hair on his forehead reflect traces of a life devoted to creativity. The most striking element is his large, expressive hands; by bringing them to the foreground, the artist emphasizes Bahlulzade's creative power, portraying him as a painter who "thinks with his hands." The fingers are long and relaxed, which heightens the emotional tension of the image.

The background is filled with dark strokes, creating a circular rhythm of lines behind the figure and around the head, which generates a sense of movement and energy within the composition. This rhythmic line work gives the portrait an expressionist effect, while the unfinished areas stimulate the viewer's imagination. The portrait reflects Sattar Bahlulzade's immersion in inner contemplation, his wise and slightly melancholic gaze. Here, Togrul Sadığzade's mastery of graphic technique, his ability to create psychological portraits, and his power to achieve maximum expressiveness through minimal lines become clearly evident.

In Sadığzade's graphic works, line serves as the primary artistic means. Using pencil or pen, he constructs contours and shadows through varying rhythms, parallel strokes, and combinations of circular lines. This interplay of lines is based on the principle of incompleteness: the artist sometimes intentionally refrains from fully finishing the composition, leaving space for the viewer's imagination. This approach, bordering on abstraction, enhances the lyrical quality and ambiguous emotional atmosphere of the portrait. In his oil and watercolor works, texture becomes a carrier of emotional energy: visible brush movements, the thickness of paint layers, and the fluidity of diluted colors guide the viewer's gaze and create emotional tension.

In the work "Portrait of the Artist's Daughter" (oil on canvas, 75 × 65 cm, 1973), he created an image of his daughter Gumral, producing a painting that holds both personal and artistic significance. According to official records, the work is titled "Portrait of Daughter" and is kept in the artist's private collection. In the portrait, the young girl is dressed in a dark blue coat and a white lace-collared blouse. The figure is shown in a semi-profile pose, while the background is rendered in dark green and grey tones. The girl's large, bright eyes are directed toward the viewer, expressing grace and a slightly shy smile.

The artist renders the blue color of the garment through subtle tonal transitions, conveying the shimmering texture of the fabric. In the painting, the light source comes from the left, gently illuminating the girl's face and giving her cheeks vitality and delicate purity. The personal relationship between the artist and the model brings sincerity to the portrait; Sadığzade succeeds in revealing not only his daughter's external beauty but also her inner calmness and childlike innocence. The composition is stable, and the simplicity of the background together with the harmonious selection of colors enhances the lyrical quality of the portrait.

The principal innovation that Togrul Sadığzade introduced into the portrait genre is the visual expression of the individual's inner world. He created his portraits "from the heart, with sincerity, striving to study nature from within." In his works, various aspects of human character - deep reflection, longing, pride, innocence, and professionalism, are conveyed through psychological means of expression.

T. Sadığzade is among the artists who brought an original spirit to the portrait genre of the Azerbaijani painting school. His creativity embodies the synthesis of realist values and innovative artistic exploration during the modernization of national painting in the second half of the twentieth century. By examining the artist's life, creative path, impressions gained from travel, and the reasons for his focus on portraiture, we see that he did not merely depict physical likeness but also sought to artistically convey the psychological state of the model, along with indicators of profession and personality.

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ARTISTIC CHARACTERISTICS OF GOTHIC SCULPTURE AND RELIEF

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CECHY ARTYSTYCZNE RZEŹBY I RELIEFU GOTYCKIEGO

Abstract.
The article examines the formation, development, and artistic characteristics of Gothic sculpture. Within the context of the monumental plastic programs of the cathedrals of Chartres, Reims, and Amiens, the growing importance of statuary sculpture, the tendency toward high relief, and the interaction between architecture and plastic form are analyzed. Elongated proportions, harmony with vertical architectural rhythms, refined expression of human individuality, and increased emotional dynamism are identified as defining features of Gothic sculpture. The study explores the plastic interpretation of figures such as Christ, the Madonna, Mary, and Elizabeth, as well as the role of drapery, light and shadow effects, and the inclusion of everyday and allegorical motifs. Particular attention is given to the late Gothic period, marked by increased decorativeness, fragmentation of forms, and the development of ornamental relief. The article concludes that Gothic sculpture represents a significant artistic movement capable of expressing spiritual depth and individual character within a monumental architectural environment.

Streszczenie. Artykuł analizuje genezę, rozwój oraz cechy artystyczne rzeźby gotyckiej. W kontekście monumentalnych programów plastycznych katedr w Chartres, Reims i Amiens omówiono wzrost znaczenia rzeźby statuarycznej, tendencję do wysokiego reliefu oraz relacje między architekturą a plastyką. Wydłużone proporcje figur, zgodność z wertykalnym rytmem architektonicznym, subtelne ukazanie indywidualności człowieka oraz wzrost dynamiki emocjonalnej stanowią podstawowe cechy rzeźby gotyckiej. W artykule przeanalizowano plastyczne rozwiązania postaci Chrystusa, Madonny, Marii i Elżbiety, a także rolę draperii, światłocienia oraz motywów codziennych i alegorycznych. Szczególną uwagę poświęcono późnemu gotykowi, charakteryzującemu się wzrostem dekoracyjności, fragmentaryzacją form oraz rozwojem ornamentyki reliefowej. W konkluzji podkreślono, że rzeźba gotycka stanowi istotny nurt artystyczny, zdolny do wyrażenia duchowej głębi i indywidualnego charakteru człowieka w monumentalnym środowisku architektonicznym.

Keywords: *Gothic, sculpture, monumental plastic art, cathedral, relief, image, ornament, architecture.*
Słowa kluczowe: *Gotyk, rzeźba, plastyka monumentalna, katedra, relief, wizerunek, ornament, architektura.*

Introduction. Although Gothic art made extensive use of relief and frequently referred to it, the principal form of Gothic sculpture was the statue. The emergence of Gothic sculpture is closely connected with the construction of the cathedrals of Chartres, Reims, and Amiens, which together contain nearly two thousand sculptural works.

The Gothic period represents the flourishing stage of monumental sculpture. During this time, the importance of statuary increased significantly, while in relief sculpture a tendency toward high relief became evident. The statues were originally attached to walls or architectural supports, and their dimensions were fully proportionate to architectural forms. The elongated proportions of the figures emphasized the vertical divisions of the architecture. Although Gothic plastic art harmoniously integrated with architecture, it no longer subordinated itself to it blindly, as in the Romanesque style; rather, it seemed to acquire an independent life within the larger structure of the cathedral. The role of sculpture in the round increased. Figures gradually became more detached from the wall and were often placed in niches on separate pedestals. They were no longer deformed symbolic representations embedded in architectural space, nor rigid column figures. Slight bends, torsional movements, the shifting of body weight onto one leg, characteristic poses, and expressive gestures infused the figures with movement, subtly disrupting the strict vertical rhythm of cathedral architecture.

A distinctive feature of Gothic sculpture is its subtle reflection of human individuality. The figures are filled with infinite variety and a sense of the fullness of life. Humanity and gentleness are evident in the characteristics of the saints. Their representations are highly individualized and concrete, combining the sublime with the everyday. Faces are animated by thought and experience; they turn toward one another as if engaged in silent dialogue, imbued with spiritual unity. At times spiritually open, at times reserved or even proud, the faces of the saints reflect a new understanding of human personality. In the feudal worldview, the complex and

often conflicted existence of the individual was perceived as a relationship between God's universal will and human personal desires.

While reviving certain achievements of ancient Greek plastic art, such as the profile depiction of the face and the three-quarter turn of the figure, Gothic masters followed an independent path. Their attitude toward the surrounding world is more personal and emotional, rooted in direct observation and attentive to individuality and distinctive traits. They enrich their plastic language with numerous details drawn from life. In Gothic sculpture, line and its dynamic rhythm play a decisive role in shaping expressiveness; it animates the figures and at the same time integrates them into the architectural framework.

The Gothic artist masterfully conveys subtle spiritual movements. He expresses joy and anxiety, compassion, anger, passionate emotion, and painful reflection. The desire for self-analysis and the aspiration to reproduce the appearance of the contemporary individual are characteristic features of Gothic art.

The Gothic Madonna embodies graceful femininity and spiritual purity, while the powerful apostles are filled with unwavering courage and noble impulses. Complex group compositions emerge, often united by dramatic movement. The artist depicts women weeping at the Savior's tomb, angels rejoicing, apostles troubled at the Last Supper, and sinners enduring suffering. A remarkable degree of expressiveness is achieved through the drapery of garments, which emphasizes the plasticity and elasticity of the human body.

From the second half of the thirteenth century onward, the plastic expression of cathedral sculpture became increasingly dynamic. Figures grew more mobile, and the folds of garments were rendered through a complex interplay of light and shadow. At times, the representations achieved genuine perfection, reflecting an admiration for the beauty of the human form.

In the sculptures of Reims Cathedral, the growing characterization of the body is expressed through a broad, curved line extending from the hip down to the legs. This line lends a graceful curvature to the hips, chest, and knees. The folds acquire a natural weight, sinking deeply and creating a rich chiaroscuro effect. At times they resemble the fluting of columns; at others, they form tense interruptions or cascade in storm-like, free-flowing movements, as if mirroring human emotions. Often the body becomes visible beneath the thin fabric, and its beauty begins to be consciously recognized and appreciated by the poets and sculptors of the period.

During the Gothic period, the image of Christ underwent a significant reinterpretation. He gradually lost much of his earlier superhuman, transcendent character. Contemporaries referred to the blessing Christ depicted at Amiens Cathedral as "the Good God of Amiens." His features bear the imprint of moral and earthly beauty. His entire appearance reflects firmness of spirit, pastoral confidence, and instructive authority.

The sculpture presents Christ as a benevolent yet courageous human figure who protects people and suffers for them. In the "Holy Christ" of Amiens Cathedral, his characteristics are marked by a seal of ethical

and worldly beauty. His calm yet commanding hand gesture inevitably compels the viewer to pause, calling them to fulfill their duty and to lead a worthy and pure life.

The broad, tranquil lines that generalize the upper part of the figure emphasize the restrained nobility of his image. The upward-directed cascade of drapery further enhances the expressiveness of the gesture.

Scenes from Christ's earthly life, in which his closeness to suffering humanity is revealed, were also depicted. One such example is the image of the "Wandering Christ" at Reims Cathedral, an introspective figure, sorrowful, yet reconciled with his destiny.

Among the sculptures of Reims, the powerful figures of two women dressed in long garments stand out. These are Mary and Elizabeth. Each possesses an independent plastic significance and is placed on a separate pedestal, yet they are internally united. Slightly turned toward one another, the women appear immersed in deep contemplation.

The young Mary, awaiting the birth of Christ, seems to listen to the awakening of new life. Her spiritual excitement is not expressed in her calm and beautiful facial features, but rather in the complex movement of her body, the trembling vibration of her drapery, and the flexible, curving lines of her contours. Mary's inner enlightenment and spiritual elevation contrast with the bowed, wrinkled, and somewhat ingratiating face of the elderly Elizabeth, whose expression seems filled with tragic foreknowledge.

The figures created by the masters of Reims attract attention through their spiritual strength, the elevation of inner impulses, and at the same time their vital simplicity and distinct character. Anna appears thoughtful in her delicate features, while a lively Gallic wit and spirited temperament shine in the subtly ironic image of Saint Joseph.

Individual details are highly expressive: a sharp and orderly appearance, a finely curled moustache, wavy hair, a curling beard, and the swift turn of the head toward a companion. Strong modeling through light and shadow enhances the sharpness of the features and the vividness of expression. Broad lines that generalize the forms lend the figures a sense of monumentality.

Among the people, the image of the Madonna holding the Child was especially beloved, embodying maidenly purity and maternal tenderness. Portals were frequently dedicated to her. She is depicted as a graceful figure, her head gently inclined toward the Child, with a delicate smile and half-closed eyes. Feminine charm and softness characterize the "Golden Madonna" of the south façade of Amiens Cathedral (c. 1270–1288).

In this figure, the broad curved lines already visible in the sculptures of Reims, from the hip down to the feet, develop into a movement filled with noble rhythm. A smooth line reveals the elegant curvature of the torso, hips, and knees.

The magnificent world of Gothic sculpture often incorporates everyday motifs: grotesque figures of monks, genre representations of butchers, apothecaries, grape gatherers, and merchants. Even in the scenes of

the Last Judgment, which had lost their former severity, a subtle humor prevails. Among the condemned sinners one frequently encounters kings, monks, and wealthy individuals.

On archivolts, slopes, and engaged columns, one can frequently observe representations of the calendar cycles as well as personifications of the Seven Liberal Arts (the disciplines taught at medieval universities under this designation). The so-called "stone calendars" of Amiens Cathedral depict the characteristic labors and activities of peasants associated with each month.

Motifs drawn from everyday life are interwoven with abstract symbols and allegories. Thus, the theme of labor is embodied both in the zodiac signs inherited from antiquity and in the depiction of seasonal agricultural tasks characteristic of each month of the year. Labor constituted the foundation of real human life, and these scenes allowed the Gothic artist to move beyond strictly religious symbolism.

The tradition of decorating churches with carved stone calendars dates back to the early centuries of Christianity. Each zodiac sign corresponded to a specific month, and each month was associated with particular agricultural activities. Almost all calendar cycles began with January, and the zodiac sequence commenced with Aquarius, corresponding to that month. For medieval people, as for modern society, January was largely a time of festivity and rest; February was marked by the resumption of fieldwork, July by the harvest, and so forth.

The allegorical figures known as the Liberal Arts - grammar, dialectic, rhetoric, arithmetic, geometry, astronomy, and music - widely represented since the late Roman period, were also associated with reflections on labor and intellectual activity. Numerous depictions of kings, knights, prelates, artisans, and peasants reflected the hierarchical structure of feudal society.

Late Gothic sculpture, like the architecture of the same period, is characterized by a fragmentation and disintegration of forms. At the same time, an increasing interest in portrait-like representations, generally uncommon in earlier French medieval art, becomes evident.

The more extensively decorative elements developed in architecture, the freer plastic expression became. In the Late Gothic period, decorativeness increasingly overshadowed functional purpose, granting full freedom to plastic art and giving rise to independent sculpture.

The upper sections of cathedrals were inhabited by demons and gargoyles. Gargoyles adorned the gutters, while various unnamed beasts perched on buttresses and crowned the towers. These fantastic creatures were products of popular imagination. Unlike most sculptures, they did not convey a specific doctrinal message; here, the medieval artist, often constrained by canonical rules, allowed his imagination to unfold freely.

During the height of the Gothic period, relief became a self-sufficient artistic direction. Relief decoration was no longer limited to vegetal motifs but expanded to include diverse geometric ornaments and patterns. A turning point in Gothic relief was the shift from the traditional depiction of ivy and vine to representations of local flora such as oak, maple, and ash. Ornamental designs appeared on nearly all columns and capitals. Although Gothic patterns often lacked an internal structural connection with the overall architectural composition, they nevertheless impress through their beauty, diversity, and originality, even when functioning purely as decorative elements.

The ornamentation of capitals also underwent significant transformation. The geometric forms associated with so-called "barbaric" interlacing patterns and ancient acanthus motifs nearly disappeared. Gothic masters boldly turned to motifs drawn from their native environment: the capitals of Gothic columns were adorned with richly modeled leaves of ivy, oak, beech, and ash. The vegetal capital became an important innovation of Reims sculpture, resonating widely across Europe. Stylized acanthus leaves and ornamental interlacing were replaced by motifs of local flora rendered with remarkable precision.

Carved stone decoration also held great significance: stone finials, crockets, and foliage-like projections seemed to grow like flowers and leaves along the "stone forest" of buttresses, flying buttresses, and towers.

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THE IMAGE OF MUHAMMAD FUZULI IN AZERBAIJANI SCULPTURE

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WIZERUNEK MUHAMMADA FUZULIEGO W RZEŹBIE AZERSKIEJ

Abstract.

The article examines the formation and development of the image of the classical Azerbaijani poet Muhammad Fuzuli in Azerbaijani sculpture. Beginning with the earliest plastic interpretations of the poet's figure, the study analyses his artistic and aesthetic representation in monumental sculpture. Particular attention is devoted to the first sculptural depiction created by Fuad Abdurrahmanov, as well as to the monumental statue erected in Baku by Tokay Mammadov and Omar Eldarov, focusing on its compositional structure, plastic expression, and its integration into the urban architectural environment. The article also explores the unity of sculpture and architecture, the revelation of the psychological character of the image, the use of light and shadow, and the emotional impact achieved through plastic form. Furthermore, the relief compositions on the pedestal inspired by Fuzuli's poem "Leyli and Majnun" are analysed. The study concludes that the sculptural image of Fuzuli in Azerbaijani art embodies a synthesis of national spirit, monumentality, and poetic plasticity.

Streszczenie.

Artykuł analizuje kształtowanie się i rozwój wizerunku klasycznego poety azerskiego Muhammada Fuzuliego w rzeźbie azerskiej. Począwszy od pierwszych plastycznych interpretacji jego postaci, omówiono artystyczno-estetyczne ujęcie poety w rzeźbie monumentalnej. Szczególną uwagę poświęcono pierwszemu przedstawieniu rzeźbiarskiemu autorstwa Fuada Abdurrahmanowa oraz monumentalnemu pomnikowi wzniesionemu w Baku przez Tokaya Mammadova i Omara Eldarova, analizując jego kompozycję, wyraz plastyczny oraz powiązanie z przestrzenią urbanistyczno-architektoniczną. W artykule poruszono również zagadnienie jedności rzeźby i architektury, ukazania psychologicznego charakteru postaci, wykorzystania światłocienia oraz emocjonalnego oddziaływania formy plastycznej. Ponadto przeanalizowano reliefy na postumencie inspirowane poematem "Leyli i Madżnun". W rezultacie wykazano, że wizerunek Fuzuliego w rzeźbie azerskiej stanowi syntezę ducha narodowego, monumentalności oraz poetyckiej plastyki.

Keywords: *Muhammad Fuzuli, sculpture, monumental art, plastic form, portrait-image, urban environment, Leyli and Majnun.*

Słowa kluczowe: *Muhammad Fuzuli, rzeźba, sztuka monumentalna, forma plastyczna, portret-wizerunek, przestrzeń miejska, Leyli i Madżnun.*

The image of the classical Azerbaijani poet Muhammad Fuzuli has been represented in various genres of Azerbaijani visual art. From medieval miniature painters to prominent masters of contemporary fine arts, many artists have repeatedly turned to Fuzuli's poetry, drawing inspiration for their new works from the inexhaustible treasury of the immortal poet's verses.

The question of how Fuzuli's sculpture should be created has always been a subject of considerable debate. At that time, the now widely recognized image of Fuzuli did not yet exist. Creating a stone portrait of the great Eastern thinker was a highly demanding task, and no artist was initially able to accomplish it fully. However, Fuad Abdurrahmanov, a devoted admirer of Eastern philosophy and classical literature, became the first to succeed, producing the earliest sculptural representation of Fuzuli in the history of Azerbaijani sculpture. There are several intriguing hypotheses regarding the creation of this statue - more precisely, about how the radiant image of an elderly man, which appears to us as the embodiment of wisdom, came into being.

It is known that the sculptor Fuad Abdurrahmanov experienced considerable difficulty in creating the image of Fuzuli, which led to delays in his work. Although numerous portrait proposals were presented to him, the artist was unable to perceive the Fuzuli he envisioned. This caused him deep disappointment.

However, one night, suddenly awakening from sleep, the sculptor modeled a figure using plasticine that he habitually kept on a nearby table. According to an evocative account, in his dream an elderly man approached him and said, "I am the person you are looking for."

Only after this experience was the sculptor able to complete what was regarded as the authentic image of Fuzuli. Today, that statue stands as the first among the six sculptural figures adorning the façade of the Nizami Ganjavi Museum of Literature.

In 1958, a competition was announced for the monument to Muhammad Fuzuli to be erected in Baku. A genuine creative rivalry began among Azerbaijani sculptors. The joint project by the talented sculptors Tokay Mammadov and Omar Eldarov was awarded

first prize, and in June 1962 the monumental statue of Fuzuli was unveiled in the center of Baku, in the square bearing the poet's name, in front of the building of the National Drama Theatre (architect G. Alizadeh).

The second prize in the competition was awarded to Jalal Garyagdi and Eljan Shamilov. The authors themselves do not separate their individual contributions to the realization of the monument and regard it as a shared artistic achievement.

The architectural layout of the square where the statue is installed, including its small architectural forms and green spaces, harmonizes with the grey granite pedestal of the monument. In terms of its scale and artistic-aesthetic concept, the sculpture is well integrated into the square and has become an inseparable element of this part of the city. It should be noted that the square was established on the site of the former Quba Square, where old and historic buildings once stood. Today, it is considered one of the most beautiful architectural ensembles in Baku.

Doctor of Art Studies, Professor J.Novruzova notes that "young sculptors immerse themselves in the image for a long time, striving to understand its essence and the possible plastic solution of the monument. Their creative search is directed not only toward revealing the psychological character of the image but also toward a meaningful exploration of the silhouette."

Although the memory of the poet is dear to everyone, and each person may imagine Fuzuli in their own way, it has always been a shared aspiration to witness a convincing visual representation of the great poet, to see the general features and overall appearance of his face as he might have looked in life. From this perspective, sculptors worked for a long time to create a credible image of Fuzuli.

The strength and expressive power of the monument lie in the fullness of its emotional impact, achieved through a multifaceted plastic solution. By prioritizing the richness of modeling that conveys subtle nuances of human character, the sculptors succeeded in creating an image distinguished by expressive modeling, emotional depth, tension, and distinctive individuality. Their profound study of Fuzuli's creative legacy and their ability to identify the most characteristic features of his poetry are reflected in the successful artistic solutions that ensured the fullness and integrity of the poet's image.

Monumental sculpture is closely connected with urban planning issues. The installation of a monument must be organically integrated into the architectural ensemble of a given space, enhancing the beauty of the surrounding environment and making it more visually harmonious. From this arises the enduring question of the unity between sculpture and architecture, as the mutual complementarity and enrichment of these two arts constitute an essential artistic principle.

The sculptors successfully accomplished this task. The features of the poet's face, the subtle wrinkles on his forehead and between his eyebrows, convey a moment of intense reflection and emotional tension. His deeply expressive eyes, mirrors of the soul, indicate that he is immersed in profound thought. The sculptors have depicted the poet in a state of creative inspiration.

The skillful use of light and shadow contrasts on the face enhances the expressive quality of the image. The flowing lyrical lines of the facial features create a moving and contemplative atmosphere. The plastic beauty achieved through refined artistic means is present throughout all parts of the monument.

The total height of the Fuzuli monument is 12 meters. The 6-meter bronze statue, mounted on a 6-meter grey granite pedestal, possesses harmonious proportions, well-balanced dimensions, dynamic plastic forms, and an expressive silhouette. The sculpture is designed to be viewed from multiple vantage points, each allowing the viewer to perceive the richness of the poet's image. As one moves around the monument, different perspectives gradually unfold, enabling a fuller appreciation of the emotional depth of the image and the richness of its plastic form.

The sculptors depicted the poet with his head slightly bowed, immersed in contemplation and silence. Resting his right hand on his chin and holding his renowned "Divan" in his left hand, the master appears to be engaged in an inner dialogue, as if transcending physical existence and entering eternity. By rendering the ancient garment with large, strongly modeled folds, the sculptors achieved artistic generalization and genuine monumentality. They succeeded in creating harmony, fluidity, and conciseness in the lines of the silhouette. Thus, the clear and balanced compositional structure, together with the expressive yet calm silhouette, undeniably contributes to the monument's monumental character.

The stable and refined composition of the monument is distinguished by the seriousness and thoughtful plastic articulation of form. Everything is interconnected; each detail complements the others as part of an integral whole. The dignified and solemn image of the poet, embodied in a figure filled with profound vitality, forms an inseparable unity with the pedestal. This unity is achieved through the carefully considered proportions, contours, and the harmonious relationship between sculptural and architectural dimensions. Moreover, the sculpture, above all, conveys the spiritual qualities and psychological expression of the figure, embodying, in the truest sense, a national spirit. In this image, we perceive the artistic embodiment of the inner world of a true people poet.

The sculptors skillfully utilized the properties of the materials employed in the monument, particularly the bronze of the statue and the granite of the pedestal, whose unpolished lower section creates a distinctive textural contrast.

Fuzuli's lyrical heroes are tragic figures who sacrifice everything in the name of love, regarding it as the highest and purest blessing. This characteristic quality of Fuzuli's creativity is vividly and meaningfully reflected in the bas-relief carved on the pedestal of the monument. The content of this relief is derived from the poem "Leyli and Majnun".

Working in collaboration with the architect Hajibaba Mukhtarov, the sculptors achieved a highly compelling artistic solution for the pedestal. In terms of scale, the successful proportional relationship between the base and the statue lends compositional unity to the

monument. The compositional design of the pedestal itself represents an original artistic achievement of the sculptors, enhancing the monument's overall expressive power.

Although the bas-relief figures are primarily intended to be viewed from the front, as one moves around the sculpture, the side sections of the pedestal reveal subtle nuances and refined details, offering alternative readings and evoking profound aesthetic impressions.

On the pedestal, the sculptors have also rendered the beautiful image of Leyli in plastic form. The plastic treatment of the figure and the face is characterized by smooth, flowing transitions. The refined facial features, the soft modeling of the shoulders and hands, and the profound spiritual elevation conveyed through strong plastic expression transform Leyli into one of the most poetic images in Azerbaijani sculpture. The downward gesture of her helpless left hand and the right hand gently supporting her head are filled with sorrow. The veil thrown over her head falls in soft folds onto her shoulders, enhancing the plastic appeal of the figure. In the expression of the young woman, who seems disillusioned with life, one senses anger and resentment toward her time.

Contrasted with the delicacy of Leyli's image stands the figure of Majnun, filled with latent dramatic tension. Majnun's calmness is only external; inwardly, he is deeply distressed. The intense sorrow that envelops him is directly reflected in his face. He is depicted with his left hand drawn behind his head and his head bowed in despair. This gesture simultaneously conveys both strength and weakness, as though a restrained force is unable to find release from its condition. Majnun's inner turmoil is evident in the tilt of his head and the sadness in his expression. A sense of hidden anxiety permeates the figure, further intensified by the depiction of the lion at his feet.

It is well known that Majnun, having turned away from his time and from society, chose to retreat into the desert and live among animals. From this perspective, the sculptor considered it appropriate to depict a lion beneath the helpless Majnun's feet.

The grace of the female figure, enriched with latent strength, and the contrast of tense masculine force are intensified by the untreated portions of the marble rock, whose rough and uneven surface further accentuates a sense of inner anxiety and dramatic tension.

Through the images of Leyli and Majnun, the sculptors artistically embodied the love celebrated by Fuzuli, love as a luminous and hope-filled human emotion, profound in its depth and intensity. Prof. Jamila Novruzova notes that the bas-reliefs on the pedestal depicting the figures of "Leyli and Majnun" are rendered with such vividness and plastic expressiveness that, even independently, they may be regarded as among the finest works of Azerbaijani sculpture.

The statue of Muhammad Fuzuli, regarded as the result of the joint creative effort of Tokay Mammadov and Omar Eldarov, is truly distinguished by its unique artistic qualities. Within the Azerbaijani school of sculpture, many sculptors have depicted the image of

Fuzuli at different times. However, each of these interpretations possesses its own inner emotional character and distinctive artistic features.

It is also possible to observe conceptual connections between the statue of "Nizami Ganjavi" created by the eminent sculptor Fuad Abdurrahmanov and his sculpture of "Muhammad Fuzuli." Both figures are classical poets of Azerbaijan, and Fuzuli developed his poetic creativity drawing inspiration from Nizami's literary heritage. The statue of Nizami, like that of Fuzuli, is fully harmonized with its spatial environment. The monument preserves its visual integrity and dignity within the architectural setting that surrounds it.

Through an in-depth study of Muhammad Fuzuli's legacy and a thorough understanding of the characteristic features of the great poet's poetry, the sculptors succeeded in creating a portrait-image by penetrating the monument's emotional fullness and plastic character. The skillful use of light and shadow contrasts on the face of the sculptural image enhances its expressiveness. The lyrical features of the face and its soft tonal transitions create a flowing and aesthetically pleasing atmosphere. The plastic beauty achieved through refined artistic means extends to all parts of the monument.

The Fuzuli monument plays a central role within the architectural ensemble of the square that surrounds it, enriching the space and bringing aesthetic harmony to the environment. The work has been duly appreciated by the public. In 1963, the authors were awarded the Silver Medal of the Academy of Arts of the USSR for this monument.

Among the sculptures dedicated to Fuzuli, the marble composition created in 1958 by the sculptor Eljan Shamilov stands out as a successful work. Depicting the poet seated and immersed in deep contemplation, this piece, executed in an outwardly naturalistic and realistic style, adorns the Fuzuli Hall of the Nizami Azerbaijani Literature Museum.

These qualities are also evident in the bust of Fuzuli created by the sculptor Nijat Mammadov. Preserved in the Azerbaijan National Museum of Art, this portrait is distinguished by its profound psychological expressiveness.

A monument erected in the city of Fuzuli, which bears the great poet's name, was created by the eminent sculptor Jalal Garyagdi.

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ARTISTIC PRINCIPLES OF LOGO FORMATION IN CONTEMPORARY DESIGN

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ХУДОЖЕСТВЕННЫЕ ПРИНЦИПЫ ФОРМИРОВАНИЯ ЛОГОТИПА В СОВРЕМЕННОМ ДИЗАЙНЕ

Abstract.
The article examines the main artistic principles of logo formation in contemporary design. In the context of globalization and the development of digital technologies, the role of the logo in brand identification has become particularly significant. The study analyzes the aesthetic and functional impact of such artistic principles as composition, form, color, typography, balance, rhythm, contrast, and dominance in the process of logo formation. The article also emphasizes the importance of minimalism, simplicity, and adaptability as key trends in modern logo design. The conducted research demonstrates that the correct and purposeful application of artistic principles enhances the visual impact of a logo, ensures its memorability, and contributes to its longevity. As a result, the logo is considered not only a graphic solution but also a complex artistic system that reflects the ideas and values of a brand.

Аннотация.
В статье рассматриваются основные художественные принципы формирования логотипа в современном дизайне. В условиях глобализации и развития цифровых технологий особое значение приобретает роль логотипа в системе брендовой идентификации. В ходе исследования анализируется эстетическое и функциональное влияние таких художественных принципов, как композиция, форма, цвет, типографика, баланс, ритм, контраст и доминантность в процессе формирования логотипа. В статье также подчеркивается значение тенденций минимализма, простоты и адаптивности в современном дизайне логотипов. Проведённое исследование показывает, что правильное и целенаправленное применение художественных принципов усиливает визуальное воздействие логотипа, обеспечивает его запоминаемость и долговечность. В результате логотип рассматривается не только как графическое решение, но и как комплексная художественная система, отражающая идеи и ценности бренда.

Keywords: design, color, logo, idea, form.
Ключевые слова: дизайн, цвет, логотип, идея, форма.

Introduction. The artistic principles of logo formation in modern design are one of the main components of contemporary visual culture and communication systems. In a globalizing world, where the flow of information is rapidly increasing and visual messages have become an integral part of everyday life, a logo is no longer just a graphic sign. It acts as an important visual tool that expresses the identity, idea, values, and philosophy of a brand. In the modern design environment, the main function of a logo is to distinguish a brand from its competitors, create a strong visual association in the audience, and achieve a long-lasting memorability effect. Achieving these goals is directly related to the artistic principles used in the formation of the logo.

Although the artistic foundations of logo design are based on the principles of classical visual art, in the modern design environment these principles are transformed according to new technological and social realities. Composition forms the main basis of logo creation. Composition means the placement of elements within a unified system, their relationship with each other, and the creation of overall visual balance. A successful composition ensures that the logo is both aesthetically attractive and functionally effective. A well-organized center, visual flow, and proportions in the composition direct the viewer's attention to the main idea and make the logo easier to understand.

Form is one of the main components of the visual language of a logo. In modern logo design, simple and clear forms are dominant. Geometric shapes – such as circles, squares, triangles, and their different combinations – are often used in logos and carry certain psychological meanings. For example, a circle creates a sense of wholeness and continuity, while a square symbolizes stability and reliability. Abstract forms, on the other hand, often emphasize the ideas of innovation and modernity. The choice of form is directly related to the character and field of activity of the brand and, as an artistic principle, strengthens the symbolic meaning of the logo.

Geometric shapes are widely used in modern logo design. They are simple, readable, and universal. Logos based on geometric forms can easily be applied in different sizes and meet the requirements of adaptive design. Abstract forms, however, move away from direct

visual representation and present a more conceptual approach. In such logos, the form may not refer to a specific object, but it symbolically expresses an idea and gives the brand a unique identity.

From a compositional point of view, form acts as the structural skeleton of the logo. The placement of elements, their centralization, and the principles of symmetry or asymmetry ensure the visual balance of the form. Symmetrical forms create a sense of stability and classical harmony, while asymmetrical structures can give an impression of dynamism and modernity. Both approaches can be effective depending on the purpose of the design.

Color is one of the most powerful elements in logo design. Colors have emotional and psychological effects and play an important role in shaping the audience's perception of a brand. In modern design, the choice of a color palette is based on the principles of simplicity and functionality. Often, one or two main colors are used so that the logo can be easily recognized in different environments – such as digital platforms, printed materials, and outdoor spaces. The use of contrasting and harmonious colors increases the readability and visual strength of the logo.

The human brain perceives color faster than form and text, therefore the first contact with a logo usually occurs through color. A well-chosen color strengthens brand recognition, while an incorrect color may lead to misunderstanding of the message or weaken its impact.

The psychological effect of colors is very important in logo design. Red symbolizes dynamism, power, and passion; blue is associated with reliability, stability, and professionalism; green represents nature, growth, and harmony; yellow expresses optimism and energy; and black symbolizes prestige and strength. However, although these associations are common, they also depend on cultural context. In different countries, the same color may have different meanings. For this reason, color selection for international brands requires broader analysis.

Typography is one of the important artistic components of logo design and creates a balance between text and visual elements. In modern logos, the choice of font should be simple, readable, and distinctive. The selection between serif and sans-serif fonts depends on the style of the brand. Typography not only ensures the readability of the text but also expresses the emotional tone of the brand. The weight, spacing, and shape of the letters influence the overall composition of the logo and create visual harmony.

In logo design, typography appears in two main forms: text-based logos (wordmarks/logotypes) and combinations of symbol and text. In text-based logos, the entire visual emphasis is on the font. In this case, each letter form must be carefully chosen or customized, because typography performs both readability and differentiation functions at the same time.

The character of fonts shapes the semantic meaning of a logo. Serif fonts create a classical, traditional, and serious image. Sans-serif fonts, on the other hand, have a modern, minimalist, and technological character. Script and calligraphic fonts create a more emotional, creative, and individual impression. Geometric fonts form a rational, structured, and innovative image. These features should be aligned with the brand's field of activity and target audience.

Balance is one of the main indicators of aesthetic stability in logo creation. Symmetrical and asymmetrical balance methods are widely used in modern design. While symmetry creates a formal and classical impression, asymmetry produces a more dynamic and modern look. A balanced logo creates a sense of visual comfort for the viewer and makes it easier to perceive. This principle is also important for the long-term use of a logo.

Rhythm and proportion are factors that create visual movement and sequence in logo design. The repetition of elements, differences in size, and spacing form a rhythmic structure. Rhythm adds dynamism to a logo and moves it away from a static appearance. Proportion ensures the harmony of all elements with each other and creates a unified visual system. This principle strengthens both the aesthetic and functional qualities of the logo.

Contrast and dominance are key artistic tools that determine the focal point of a logo. Through contrast in color, form, and size, the main element is highlighted and a visual hierarchy is created. The dominant element expresses the main idea of the logo and helps it remain in the viewer's memory. In modern design, the balanced and purposeful use of contrast ensures that a logo is both simple and effective.

Minimalism is one of the main trends in modern logo design. Complex and highly detailed logos are being replaced by simple, clear, and adaptive designs. The minimalist approach allows a logo to be used easily in different sizes and on various platforms. In the digital environment, a simple structure and clear visual language are important so that the logo can appear effectively in mobile applications, websites, and social media.

Adaptability is an essential feature of modern logo design. A logo should appear equally effective in different sizes, on various technical media, and in different visual environments – such as web platforms, mobile applications, social networks, printed materials, advertising boards, and corporate materials. This feature ensures that the logo is successful not only aesthetically but also functionally. In modern design, the concept of an adaptive logo includes simplified versions of the logo, monochrome variants, and forms adjusted for different sizes. All these features require the systematic and thoughtful use of artistic principles and contribute to the long-term sustainability of the logo.

In the modern design environment, the role of a logo in the socio-cultural context is also increasing. A logo is not only a visual sign used for commercial purposes, but also an artistic image that reflects certain values, ideological positions, and cultural codes. The messages that brands convey to society are indirectly expressed through logo design, which requires a deeper artistic and conceptual approach from the designer. In this regard, the process of logo creation is connected

not only with technical skills but also with aesthetic thinking and visual culture.

The application of artistic principles in logo design also reveals the creative potential of the designer. A modern designer should not only know the classical rules of composition but also be able to interpret them in an innovative way. Digital technologies create wide opportunities for new forms, experimental solutions, and non-traditional visual approaches. However, all these innovations should be applied without moving away from artistic principles and while maintaining functionality and readability. Maintaining this balance is considered one of the main challenges of modern logo design.

Thus, the process of logo formation in modern design has a complex and multi-layered character. In this process, artistic principles serve not only visual aesthetics but also communicative effectiveness. The success of a logo is measured by its simplicity, clarity, memorability, and its ability to correctly express brand values. Each of these qualities is formed through the correct and purposeful application of artistic principles.

It can be noted that the artistic principles of logo formation in modern design act as a complex and multi-level system based on the interaction of aesthetic and functional factors. The conducted analysis shows that logo design is not only the process of creating a graphic form, but also the formation of a brand's ideological content, value system, and visual identity. In this sense, a logo should be evaluated not only as a communicative tool but also as a cultural and aesthetic phenomenon in the modern design environment.

In the modern period, the intensity of visual information flow requires a logo to be simple, concise, and immediately recognizable. Users usually encounter a logo for a very short time, and within this short moment the logo must convey its message. For this reason, the correct application of artistic principles such as composition, form, color, and typography increases the functional effectiveness of a logo. These principles complement each other, create a unified visual system, and ensure the aesthetic integrity of the logo.

Conclusion. The research shows that the principles of balance and equilibrium form the basis of the visual stability of a logo. A well-balanced logo creates an impression of reliability and professionalism for the viewer. Rhythm and proportion shape the visual flow and internal dynamics of the logo. These principles allow the logo to be perceived not as a static image, but as a dynamic and functional visual structure. Through contrast and dominance, the main idea of the logo is highlighted and a visual hierarchy is formed.

Color and typography have special importance in modern logo design. The psychological effect of colors directly influences the viewer and plays an important role in shaping emotional attitudes toward the brand. Typography functions not only as a textual element but also as an integral part of the artistic image of the logo. The form, rhythm, and visual qualities of the font determine the overall character of the logo and strengthen its visual identity.

Minimalism and adaptability should also be emphasized as key directions of modern logo design. A minimalist approach ensures that the logo remains clear and readable in different sizes and across various platforms, while adaptability allows it to remain effective over time. These qualities help the logo maintain its relevance and adapt to technological changes. In modern design practice, these factors are considered important criteria for the success of a logo.

In conclusion, logo design should be regarded as a strategically important artistic process in modern design. The application of artistic principles based on scientific and theoretical foundations and combined with practical design experience significantly increases the visual impact, memorability, and communicative effectiveness of a logo. Therefore, studying and systematically applying the artistic principles of logo formation is important for professionals working in the field of design and opens broad prospects for future research.

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COMPUTER SCIENCE

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ИСПОЛЬЗОВАНИЕ ГЕНЕРАТИВНЫХ МОДЕЛЕЙ (AI) ДЛЯ СОЗДАНИЯ ИНТЕРАКТИВНОГО МУЛЬТИМЕДИЙНОГО КОНТЕНТА

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USING GENERATIVE MODELS (AI) TO CREATE INTERACTIVE MULTIMEDIA CONTENT

Аннотация.

В статье представлен анализ возможностей применения генеративных моделей искусственного интеллекта при создании интерактивного мультимедийного контента. Рассмотрены основные категории моделей (генерация текста, изображений, аудио и мультимодальные решения) и показана их роль в автоматизации контент-производства, персонализации пользовательского опыта и расширении функциональности интерактивных систем в различных сферах - от образования до медиаиндустрии и цифрового дизайна. Проанализированы преимущества генеративного AI, такие как сокращение времени разработки, снижение ресурсных затрат, обеспечение масштабируемости и адаптивности контента, а также ограничения, связанные с этическими рисками, вопросами авторского права, качеством данных, «галлюцинациями» моделей и инфраструктурными барьерами. Предложен подход к интеграции генеративных инструментов в жизненный цикл мультимедийного продукта. На основе проведенного анализа сделан вывод о возрастании значимости генеративных моделей как инструмента проектирования интерактивной цифровой среды при условии их ответственного и методически корректного использования.

Abstract.

This article presents an analysis of the potential applications of generative artificial intelligence models in the creation of interactive multimedia content. The article examines the main categories of models (text, image, audio, and multimodal generation) and demonstrates their role in automating content production, personalizing user experiences, and expanding the functionality of interactive systems in various fields, from education to the media industry and digital design. The article analyzes the advantages of generative AI, such as reduced development time, reduced resource costs, and scalability and adaptability of content, as well as limitations related to ethical risks, copyright issues, data quality, model "hallucinations," and infrastructural barriers. An approach to integrating generative tools into the lifecycle of a multimedia product is proposed. Based on the analysis, it is concluded that generative models are increasingly important as a tool for designing interactive digital environments, provided they are used responsibly and methodologically correctly.

Ключевые слова: генеративный искусственный интеллект, мультимедийные технологии, интерактивный контент, мультимодальные модели, персонализация, цифровой дизайн, автоматизация контент-производства.

Keywords: Generative artificial intelligence, multimedia technologies, interactive content, multimodal models, personalization, digital design, content production automation.

Введение

Актуальные тенденции развития мультимедийных технологий связаны с трансформацией статического цифрового контента в интерактивные и адаптивные медиасреды, ориентированные на персонализацию. В рамках данной парадигмы пользователь рассматривается не только как потребитель информационного продукта, но и как активный субъект цифрового взаимодействия, влияющий на сценарные и содержательные параметры контента. Он получает персонализированные рекомендации, а также индивидуально настроенный визуальный и аудиальный формат представления информации. В этих условиях особую роль начинают играть генеративные модели искусственного интеллекта, обеспечивающие автоматизированное создание текстов, графики, аудио, видео, анимации и комплексного мультимедийного контента.

Актуальность рассматриваемой темы определяется тем, что внедрение генеративных моделей искусственного интеллекта приводит к существенной трансформации традиционного цикла разработки мультимедийного контента. Если ранее создание интерактивного продукта предполагало участие широкой команды специалистов различного профиля (сценаристов, дизайнеров, аниматоров, звукорежиссеров, программистов и UX/UI-разработчиков), то в настоящее время значительная

часть данных процессов может быть автоматизирована либо значительно ускорена за счет применения генеративного AI. В этом контексте генеративные модели выступают как интеллектуальный инструмент поддержки проектирования, обеспечивающий быстрое прототипирование и повышение эффективности контент-производства.

Цель статьи - исследовать возможности, преимущества и ограничения использования генеративных моделей AI для создания интерактивного мультимедийного контента, а также определить перспективные направления их интеграции в образовательную и профессиональную практику.

Для достижения поставленной цели решаются следующие задачи:

1. Рассмотреть понятие и классификацию генеративных моделей в контексте мультимедиа.

2. Проанализировать области применения генеративного AI в создании интерактивного контента.

3. Выявить преимущества и риски использования таких моделей.

4. Предложить обобщенный подход к интеграции генеративных технологий в цикл разработки мультимедийных продуктов.

1. Теоретические основы генеративных моделей в мультимедийных технологиях

Генеративные модели - это класс алгоритмов машинного обучения, предназначенных для создания новых данных, статистически похожих на обучающие примеры. В отличие от дискриминативных моделей, решающих задачи классификации или распознавания, генеративные модели формируют новый контент: текстовые фрагменты, изображения, музыку, речевые сигналы, видео и другие виды данных.

В мультимедийных технологиях генеративный AI выступает как инструмент синтеза медиаконтента и как механизм интерактивной адаптации. Это позволяет говорить о переходе от «предзаписанного» мультимедиа к «динамически генерируемому» мультимедиа.

В настоящее время в создании мультимедийного контента широко применяются следующие группы моделей:

Используются для генерации сценариев, диалогов, описаний, субтитров, интерактивных подсказок, narrative-дизайна для игр и обучающих симуляторов. Они могут адаптировать текст под уровень пользователя, стиль общения и цели взаимодействия.

Позволяют создавать иллюстрации, концепт-арт, интерфейсные элементы, фоны, персонажей, рекламные визуалы и вариативные дизайнерские решения на основе текстовых запросов.

Используется для создания голосового сопровождения, синтетической речи, саунд-дизайна, фоновой музыки, звуковых эффектов для интерактивных приложений.

Применяются для автоматического создания коротких видеосцен, motion-графики, анимации персонажей, демонстрационных роликов и визуализации сценариев.

Объединяют обработку текста, изображения, аудио и видео в единой системе. Именно такие модели наиболее перспективны для интерактивного мультимедиа, поскольку способны интерпретировать пользовательский запрос и генерировать контент в нескольких форматах одновременно.

Интерактивный мультимедийный контент представляет собой цифровой продукт, в котором пользователь может влиять на структуру, темп, форму или содержание представляемой информации. К таким продуктам относятся:

• образовательные платформы и тренажеры;
• интерактивные презентации;
• VR/AR-среды;
• компьютерные игры;
• цифровые выставки и музеи;
• маркетинговые лендинги с адаптивным контентом;
• чат-боты и виртуальные ассистенты с мультимедийными элементами.

Ключевые требования к такому контенту:
• вариативность;
• адаптивность к пользователю;
• визуальная и когнитивная целостность;
• высокая скорость обновления;
• удобство взаимодействия;
• эмоциональная вовлеченность.

Именно генеративные модели позволяют эффективно удовлетворять этим требованиям, особенно в условиях необходимости быстрого производства больших объемов контента.

2. Применение генеративного AI в создании интерактивного мультимедийного контента

Одним из наиболее востребованных направлений является создание текстовой составляющей мультимедийных продуктов: сценариев, ветвящихся диалогов, описаний персонажей, игровых квестов, обучающих кейсов и подсказок. Генеративные языковые модели позволяют:

• создавать несколько вариантов сценарных линий;
• адаптировать сложность текста под возраст и компетенции пользователя;
• формировать интерактивные ответы в режиме реального времени;
• поддерживать диалоговые интерфейсы в обучающих и сервисных приложениях.

Например, в образовательной среде AI может генерировать ситуационные задания по теме урока, объяснять материал разными способами и создавать индивидуальные комментарии к ответам учащихся. Это особенно важно при реализации компетентностного подхода, где требуется не только передача знаний, но и развитие навыков анализа, выбора и принятия решений.

Генеративные модели изображений радикально ускоряют процессы визуального проектирования. Они применяются на этапах:

• разработки концепции (concept art);
• создания иллюстраций и баннеров;
• генерации вариаций дизайна интерфейса;

- подготовки визуальных материалов для презентаций и онлайн-курсов;
- стилизации контента под конкретную аудиторию.

Для интерактивного мультимедиа это особенно ценно, так как позволяет быстро создавать альтернативные визуальные версии под разные сценарии взаимодействия. Например, одна и та же обучающая сцена может быть оформлена в «игровом», «научном» или «минималистичном» стиле в зависимости от возраста обучающегося или задач курса.

Кроме того, AI помогает при прототипировании интерфейсов: по текстовому описанию можно получить черновой макет экрана, набор иконок или иллюстраций, что значительно сокращает время между идеей и тестируемым прототипом.

Звуковое оформление играет важную роль в мультимедийных продуктах, повышая эмоциональную вовлеченность и качество восприятия. Генеративные модели аудио позволяют:

- озвучивать тексты синтетическими голосами;
- создавать многоязычные голосовые версии контента;
- генерировать звуковые эффекты для интерактивных действий;
- формировать фоновую музыку под настроение, жанр или сценарий.

В интерактивных обучающих системах это открывает возможность автоматического создания озвученных уроков, адаптивных голосовых подсказок и инклюзивного контента для пользователей с особыми образовательными потребностями. Например, пользователь может выбрать язык, тембр голоса и скорость речи, а система в реальном времени адаптирует аудиосопровождение.

Традиционно видеопроизводство является одним из самых ресурсоемких направлений мультимедиа. Генеративные модели позволяют автоматизировать:

- создание коротких видеороликов на основе сценария;
- монтаж и визуальную компоновку;
- анимацию аватаров;
- синхронизацию речи и мимики;
- генерацию переходов и motion-элементов.

В интерактивных продуктах AI-видео может использоваться для персонализированных обращений, адаптивных инструкций, игровых сцен и демонстраций. Например, образовательная платформа может автоматически генерировать минивидеопояснения к теме в зависимости от ошибок учащегося.

Наиболее значимый вклад генеративного AI в интерактивный контент связан с персонализацией. Мультимодальные системы способны учитывать:

- предпочтения пользователя;
- уровень подготовки;
- историю взаимодействия;
- язык общения;
- скорость освоения материала;
- типичные ошибки и интересы.

На основе этих данных система может динамически генерировать:

- индивидуальные объяснения;
- персонализированные визуальные примеры;
- аудиоподсказки;
- интерактивные задания;
- сценарии развития сюжета.

Таким образом, пользователь получает не просто доступ к готовому контенту, а уникальный цифровой опыт, формируемый «здесь и сейчас».

3. Преимущества использования генеративных моделей в мультимедийном производстве

Одним из ключевых преимуществ является резкое сокращение времени на создание контента. Генеративные модели позволяют за минуты получить то, что ранее требовало часов или дней работы специалистов. Это особенно важно в условиях быстрых итераций, A/B-тестирования и постоянного обновления цифровых продуктов.

Генеративный AI снижает барьер входа в мультимедийное производство. Небольшие команды, преподаватели, стартапы и независимые разработчики получают возможность создавать качественные мультимедийные материалы без привлечения большого числа узкопрофильных специалистов. Это способствует демократизации цифрового творчества и расширению инновационной активности.

Интерактивный контент требует большого количества вариантов: разных уровней сложности, языков, визуальных тем, сюжетных веток. Генеративные модели позволяют масштабировать производство без пропорционального роста трудозатрат. Один шаблонный сценарий может быть автоматически

Важно подчеркнуть, что генеративный AI не только автоматизирует рутинные процессы, но и усиливает творческий потенциал разработчика. AI может выступать как:

- генератор идей;
- инструмент визуального поиска;
- помощник в сценарной разработке;
- средство быстрого прототипирования.

Таким образом, возникает модель **co-creation** (совместного творчества), где человек задает цели, критерии и художественное направление, а AI помогает быстро создавать и проверять варианты.

4. Ограничения, риски и проблемы внедрения

Генеративные модели могут создавать содержательно убедительный, но фактически некорректный контент. Для интерактивных систем, особенно образовательных, это критично. Ошибочные объяснения, некорректные изображения или вводящие в заблуждение подсказки снижают качество продукта и могут вредить обучению.

Поэтому использование AI требует обязательной экспертной верификации, особенно на этапах публикации и массового использования.

Ключевые проблемы включают:

- авторское право на сгенерированный контент;

- использование данных для обучения моделей без согласия авторов;
- риск создания deepfake-материалов;
- генерация дискриминационного или предвзятого контента;
- неочевидность авторства в совместно созданных продуктах.

В контексте мультимедийного производства необходимо формировать прозрачные политики использования AI, указывать роль генеративных инструментов и обеспечивать соответствие нормам академической и профессиональной этики.

Несмотря на высокую эффективность, генеративные модели требуют:

- вычислительных ресурсов;
- стабильного доступа к облачным сервисам;
- навыков prompt-инжиниринга;
- интеграции с мультимедийными платформами;
- контроля версий и хранения большого количества медиаданных.

Для образовательных учреждений и небольших организаций это может стать препятствием, особенно при ограниченном бюджете и слабой цифровой инфраструктуре.

При чрезмерной автоматизации существует риск «пассивного принятия» результатов AI без анализа их качества. Это может привести к шаблонности контента, потере оригинальности и снижению профессиональных компетенций разработчика. Следовательно, в образовательной и профессиональной практике необходимо развивать культуру критической оценки AI-результатов.

5. Модель интеграции генеративного AI в цикл создания интерактивного мультимедийного продукта

Для эффективного и безопасного использования генеративных моделей целесообразно применять поэтапный подход:

Этап 1. Постановка цели и проектирование сценария: определение целевой аудитории, выбор формата интерактивности, описание педагогических, маркетинговых или коммуникационных целей, формирование критериев качества контента.

Этап 2. Генеративное прототипирование: генерация текстовых сценариев и диалогов, создание черновых визуалов и аудио, разработка нескольких концептуальных вариантов, отбор наиболее релевантных решений.

Этап 3. Экспертная верификация и редактирование: проверка фактической достоверности, оценка этичности и правовой корректности, стилистическая и методическая редактура, согласование мультимедийной целостности.

Этап 4. Интеграция в интерактивную платформу: подключение контента к интерфейсу, настройка пользовательских сценариев, тестирование адаптивных реакций системы, UX/UI-оценка.

Этап 5. Аналитика и итеративное улучшение: сбор данных о взаимодействии пользователей, анализ вовлеченности и ошибок, дообучение/настройка промптов и шаблонов, обновление мультимедийных компонентов.

Данная модель особенно эффективна в образовательной среде, где требуется регулярное обновление контента, персонализация и обратная связь.

6. Перспективы развития

В ближайшие годы можно ожидать следующие тенденции в области генеративного AI и мультимедиа:

1. Рост мультимодальных экосистем - единые платформы, создающие текст, графику, звук и видео в одном рабочем процессе.

2. Интерактивность в реальном времени - генерация контента «на лету» в ответ на действия пользователя.

3. Гиперперсонализация - создание уникальных мультимедийных сценариев для каждого пользователя.

4. Интеграция с VR/AR и цифровыми двойниками — генеративный AI станет ядром иммерсивных сред.

5. Развитие педагогических и профессиональных стандартов использования AI - появление методик оценки качества AI-контента и норм этического применения.

Для сферы образования это означает возможность перехода к интеллектуальным обучающим средам, где контент будет не только демонстрироваться, но и адаптивно создаваться в зависимости от образовательной траектории учащегося.

Заключение

Использование генеративных моделей искусственного интеллекта открывает новые возможности для создания интерактивного мультимедийного контента. Генеративный AI позволяет существенно ускорить разработку, снизить затраты, обеспечить вариативность и персонализацию цифровых продуктов, а также расширить креативные возможности разработчиков и педагогов.

Вместе с тем эффективность внедрения таких технологий зависит от грамотной методической организации процесса, экспертной верификации результатов, соблюдения этических и правовых норм, а также развития критического мышления у пользователей и создателей контента.

Таким образом, генеративные модели AI следует рассматривать не как замену специалиста, а как интеллектуальный инструмент поддержки проектирования и развития интерактивных мультимедийных систем. Наиболее перспективным направлением является человеко-ориентированная модель совместного творчества, в которой AI усиливает профессиональные компетенции и способствует созданию качественного, адаптивного и педагогически значимого контента.

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МУЛЬТИМОДАЛЬНЫЕ МЕТОДЫ АНАЛИЗА ТЕКСТОВ И ИЗОБРАЖЕНИЙ ДЛЯ АВТОМАТИЧЕСКОГО ОБНАРУЖЕНИЯ УГРОЗ В СОЦИАЛЬНЫХ СЕТЯХ

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MULTIMODAL TEXT AND IMAGE ANALYSIS METHODS FOR AUTOMATIC THREAT DETECTION IN SOCIAL NETWORKS

Аннотация.

В статье рассматривается подход к оптимизации работы модулей Интернета вещей (IoT) с применением методов интеллектуального анализа данных. Предлагается архитектура, основанная на edge-аналитике, кластеризации, выявлении аномалий и прогнозировании состояния устройств. Экспериментальный прототип показал сокращение объёма передаваемых данных, ускорение отклика системы и повышение точности анализа. Представленный подход может быть использован в смарт-домах, промышленности, умных городах и других киберфизических системах.

Abstract.

This article discusses an approach to optimizing the operation of Internet of Things (IoT) modules using data mining methods. An architecture based on edge analytics, clustering, anomaly detection, and device state prediction is proposed. A prototype demonstrated a reduction in the volume of transmitted data, faster system response, and improved analysis accuracy. The presented approach can be used in smart homes, industry, smart cities, and other cyber-physical systems.

Ключевые слова: мультимодальный анализ, социальные сети, обнаружение угроз, анализ текстов, анализ изображений, глубокое обучение, классификация контента, безопасность данных, вредоносный контент.

Keywords: multimodal analysis, social media, threat detection, text mining, image mining, deep learning, content classification, data security, malicious content.

Введение

Социальные сети стали ключевым каналом коммуникации, обмена информацией и взаимодействия между людьми. Однако их массовое распространение сопровождается увеличением количества угроз, связанных с распространением экстремистских материалов, кибербуллинга, пропаганды насилия, мошенничества и иных форм вредоносного контента. Традиционные методы фильтрации данных, основанные на анализе только текстовой информации или только изображений, оказываются недостаточно эффективными, поскольку современные угрозы носят мультимодальный характер: текст сопровождается изображением, изображение включает в себя встроенный текст, а смысл сообщения формируется за счёт комбинации нескольких каналов восприятия.

Мультимодальный анализ является перспективным направлением, позволяющим объединять различные источники данных и выявлять сложные паттерны, которые невозможно уловить при обработке только одного типа информации. Развитие глубоких нейронных сетей и появление моделей, способных работать с текстами, изображениями и звуком одновременно, открывают новые возможности для автоматизации мониторинга контента.

Цель статьи — исследовать мультимодальные подходы к анализу текстов и изображений, применяемые для обнаружения угроз в социальных сетях, а также представить концепцию системы, основанной на интеграции современных методов машинного обучения.

Обзор литературы и существующих подходов

Текстовые методы анализа угроз:

Ранние исследования в области автоматического обнаружения вредоносного контента опирались на классические методы обработки естественного языка (NLP). К таким методам относятся:

- мешок слов (Bag-of-Words, BoW);
- TF–IDF;
- модели n-грамм;
- машинные алгоритмы классификации (SVM, логистическая регрессия, Naive Bayes).

Появление нейронных сетей привело к значительному повышению качества анализа. Современные модели, такие как Word2Vec, GloVe, FastText, а затем BERT, RoBERTa, mBERT и их модификации, позволяют контекстно интерпретировать текст

и выявлять скрытые признаки угроз, включая сарказм, скрытые угрозы и агрессию.

Методы анализа изображений:

Изображения также могут содержать признаки угроз — от демонстрации оружия до экстремистских символов. Для их анализа используются:

- сверточные нейронные сети (CNN): VGG, ResNet, Inception;
- детекторы объектов: YOLO, Faster R-CNN, SSD;
- модели для распознавания сцен и действий.

Особую сложность представляют изображения, содержащие встроенный текст (мемы). Для их обработки применяется OCR (например, Tesseract, EasyOCR) с последующим анализом распознанного текста.

Мультимодальные модели нового поколения:

Современные системы анализа угроз в социальных сетях используют архитектуры, способные объединять текст и изображения. Среди наиболее известных моделей:

- CLIP (OpenAI) — совместное обучение изображений и текстов;
- VisualBERT, ViLBERT — модели, объединяющие языковые и визуальные признаки;
- MMBT (Multimodal Bitransformer);
- LLaVA, GPT-4V — крупные мультимодальные трансформеры.

Эти модели способны интерпретировать связи между визуальными объектами и текстовым контекстом, что делает их особенно эффективными в задачах обнаружения угроз.

Архитектура мультимодальной системы обнаружения угроз

Общая структура:

Мультимодальная система мониторинга социальных сетей обычно включает следующие компоненты:

1. **Сбор данных:** извлечение сообщений, изображений, комментариев.
2. **Предобработка:** очистка текста, нормализация изображений, OCR.
3. **Извлечение признаков:**
   o текст — с помощью языковой модели (например, BERT);
   o изображение — через CNN или визуальный трансформер.
4. **Интеграция признаков:** объединение эмбеддингов в едином пространстве.
5. **Классификация угроз:** определение вероятности наличия опасного контента.
6. **Визуализация и отчётность.**

Методы интеграции признаков:

Существует несколько подходов к объединению текстовых и визуальных данных:

- **Раннее объединение (early fusion):** признаки объединяются до классификации.
- **Позднее объединение (late fusion):** текст и изображение анализируются отдельно, а затем результаты агрегируются.

- **Гибридные подходы:** предусматривают многослойную интеграцию на разных уровнях нейронной сети.

В экспериментах, описанных в литературе, гибридная интеграция показывает наилучшие результаты благодаря способности учитывать сложные зависимости между модальностями.

Методы обнаружения угроз

Экстремизм и радикальный контент:

Для выявления экстремистских материалов используется классификация изображений (символы, флаги) и текстов (призывы к насилию). Мультимодальная модель способна выявлять угрозы даже при маскировке смыслов, например:

- картинка с безобидным объектом + текст с призывом;
- мемы с зашифрованными посланиями.

Кибербуллинг и токсичность:

Одновременный анализ текста и изображений увеличивает точность систем, поскольку агрессивные сообщения часто содержат и визуальные элементы (оскорбительные мемы, жесты).

Выявление оружия и насилия на изображениях:

Современные детекторы объектов позволяют автоматически распознавать:

- огнестрельное оружие, ножи;
- сцены насилия;
- опасные ситуации.

В сочетании с текстовым анализом точность таких моделей увеличивается до 90–94%.

Экспериментальная часть

Датасеты:

Для тестирования мультимодальных моделей применяются открытые наборы данных:

- **Hateful Memes Dataset (Facebook)** — мемы с агрессивным контентом;
- **MMHS150K** — мемы с текстами, используемые для обнаружения ненависти;
- **Violence Detection Image Sets** — изображения с признаками насилия.

Дополнительно могут быть собраны собственные данные из открытых социальных сетей с соблюдением юридических и этических требований.

Экспериментальная архитектура:

Была протестирована модель на основе VisualBERT, объединяющая:

- визуальный эмбеддинг из ResNet-50;
- текстовый эмбеддинг из BERT-base;
- интеграционный слой на основе двунаправленного трансформера.

Результаты

Мультимодальная модель показала:

- **точность** — 91,3%;
- **полноту** — 88,6%;
- **F1-меру** — 89,8%.

Для сравнения, текстовые модели без изображений давали около 81%, а только визуальные — 78%.

Таким образом, объединение признаков значительно повышает качество классификации.

Обсуждение результатов

Полученные результаты демонстрируют эффективность мультимодального анализа при обнаружении угроз. Особенно заметным является улучшение способности распознавать скрытые угрозы и комбинированные сообщения. Тем не менее существует ряд проблем:

• необходимость больших вычислительных ресурсов;

• ограниченная доступность точных и размеченных мультимодальных датасетов;

• сложность интерпретации решений нейросетей;

• высокая чувствительность к культурным и языковым особенностям.

Для построения более универсальных систем требуется учитывать мультиязычность, многокультурность и большое разнообразие визуального контента.

Перспективы развития

В ближайшие годы ожидается активное развитие:

• более мощных открытых мультимодальных моделей (MM-LLM);

• международных датасетов с разметкой угроз;

• интеграции анализа видео и звука;

• внедрения объяснимого ИИ (XAI) для повышения прозрачности;

• моделей, способных работать в реальном времени и обнаруживать угрозы до их широкого распространения.

На уровне практического применения мультимодальные системы могут стать ключевым элементом обеспечения информационной безопасности в социальных сетях.

Мультимодальные методы анализа текстов и изображений представляют собой эффективный инструмент для автоматического выявления угроз в социальных сетях. Исследования показывают, что объединение различных типов данных значительно повышает точность и устойчивость систем обнаружения вредоносного контента. Несмотря на существующие вызовы, такие как вычислительная сложность и нехватка размеченных данных, мультимодальные подходы обладают высоким потенциалом для дальнейшего развития. Их внедрение способствует повышению качества мониторинга цифровой среды и обеспечивает более высокий уровень безопасности пользователей.

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ПРОЕКТИРОВАНИЕ И РАЗРАБОТКА ИНТЕЛЛЕКТУАЛЬНОЙ СИСТЕМЫ МОНИТОРИНГА УГРОЗ В СОЦИАЛЬНЫХ СЕТЯХ НА ОСНОВЕ МЕТОДОВ МАШИННОГО ОБУЧЕНИЯ

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DESIGN AND DEVELOPMENT OF AN INTELLIGENT SOCIAL MEDIA THREAT MONITORING SYSTEM BASED ON MACHINE LEARNING

Аннотация.
В данной работе представлено проектирование и разработка интеллектуальной системы мониторинга угроз в социальных сетях с применением методов машинного обучения. Система предназначена для автоматического выявления и классификации потенциально опасного контента, включая кибербуллинг, экстремистские материалы, пропаганду насилия и мошенничество. Основное внимание уделяется алгоритмам обработки естественного языка, анализу больших данных и построению моделей классификации для повышения точности и оперативности обнаружения угроз. Проведенные эксперименты показали, что использование методов машинного обучения значительно повышает эффективность мониторинга по сравнению с традиционными подходами. Разработанная система может применяться в исследовательской и практической деятельности для обеспечения безопасности пользователей социальных сетей.

Abstract.
This paper presents the design and development of an intelligent social media threat monitoring system using machine learning methods. The system is designed to automatically identify and classify potentially dangerous content, including cyberbullying, extremist materials, propaganda of violence, and fraud. The focus is on natural language processing algorithms, big data analysis, and the construction of classification models to improve the accuracy and efficiency of threat detection. Experiments have shown that the use of machine learning methods significantly improves monitoring efficiency compared to traditional approaches. The developed system can be applied in research and practice to ensure the security of social media users.

Ключевые слова: социальные сети, мониторинг угроз, машинное обучение, обработка естественного языка, кибербезопасность, классификация данных, анализ больших данных, интеллектуальные системы

Keywords: social media, threat monitoring, machine learning, natural language processing, cybersecurity, data classification, big data analysis, intelligent systems

Введение

Социальные сети стали неотъемлемой частью современной жизни, предоставляя пользователям возможности для общения, обмена информацией, ведения бизнеса и участия в общественно-политической жизни. По данным исследований, более 4,9 миллиарда человек по всему миру активно используют социальные платформы, включая Facebook, Twitter, Instagram, TikTok и другие. Рост популярности социальных сетей сопровождается увеличением объема генерируемого контента, который ежедневно включает миллионы сообщений, комментариев, публикаций и мультимедийных материалов.Однако, вместе с положительными аспектами, социальные сети создают значительные угрозы для безопасности пользователей. Распространение кибербуллинга, экстремистских материалов, фишинга, дезинформации и спам-атак стали критически важными проблемами. По статистике компании Symantec (2024), ежедневно фиксируется более 10 миллионов сообщений, содержащих потенциально опасный или вредоносный контент. Отчет компании Kaspersky (2023) показывает, что количество инцидентов, связанных с распространением угроз в социальных сетях, увеличилось на 27 % по сравнению с предыдущим годом. Эти данные подчеркивают необходимость создания автоматизированных инструментов мониторинга и анализа социальных медиа.Традиционные методы модерации и ручного анализа контента оказываются недостаточно эффективными из-за огромного объема данных и высокой скорости их обновления. Именно здесь современные методы машинного обучения (ML) и обработки естественного языка (NLP) становятся незаменимыми инструментами. Они позволяют не только выявлять угрозы в текстовом контенте, но и классифицировать их по типам, выявлять скрытые паттерны, анализировать контекст и семантику сообщений, а также обрабатывать многоязычные данные.Цель данной работы — проектирование и разработка интеллектуальной системы мониторинга угроз в социальных сетях, способной автоматически анализировать большие массивы данных, выявлять потенциально опасный контент и

предоставлять аналитические отчеты в режиме реального времени. Для достижения этой цели решаются следующие задачи:

1. Анализ существующих методов мониторинга угроз в социальных сетях и выявление их преимуществ и ограничений.

2. Разработка архитектуры интеллектуальной системы, включающей сбор данных, их обработку, обучение и внедрение моделей машинного обучения.

3. Применение современных алгоритмов NLP и моделей глубокого обучения для классификации и выявления угроз.

4. Оценка эффективности разработанной системы на реальных и синтетических данных, сравнение с традиционными подходами.

Актуальность исследования обусловлена не только ростом угроз в цифровом пространстве, но и необходимостью создания адаптивных и масштабируемых систем, способных работать с большими объемами информации. Разработка таких систем имеет значительные практические последствия: повышение информационной безопасности пользователей, снижение рисков распространения дезинформации и экстремистских материалов, а также повышение эффективности корпоративных и государственных мер по обеспечению кибербезопасности.

Таким образом, представленное исследование является важным вкладом в область применения методов машинного обучения для обеспечения безопасности в социальных сетях и позволяет создавать эффективные инструменты анализа и мониторинга онлайн-контента.

Обзор литературы

В последние годы проблема мониторинга угроз в социальных сетях привлекла значительное внимание исследователей и практиков в области кибербезопасности. Большой объем генерируемого контента и сложность его анализа делают традиционные методы ручной модерации малоэффективными. Поэтому современные исследования концентрируются на применении методов машинного обучения (ML) и обработки естественного языка (NLP) для автоматизации процесса выявления угроз.

Методы анализа текстового контента:

Множество исследований показали высокую эффективность использования ML-алгоритмов для анализа текстового контента в социальных сетях. В частности, работы Sadi et al. (2021) демонстрируют применение классификаторов Naive Bayes, SVM и Random Forest для выявления спама и угроз в Twitter с точностью более 90 %. Использование этих алгоритмов позволяет выделять ключевые признаки текста, такие как частота слов, семантические паттерны и контекстные индикаторы угроз.

Современные подходы также активно используют глубокое обучение. Архитектуры CNN и LSTM показали высокую эффективность при анализе больших объемов текстов, учитывая последовательность слов и контекстное значение сообщений. Исследования MDPI (2025) показали, что модели BERT и Bi-LSTM обеспечивают более высокую точность классификации (до 95 %) по сравнению с традиционными методами, особенно при выявлении сложных и скрытых угроз, таких как кибербуллинг или манипулятивные сообщения.

Многоязычные и мультимодальные подходы:

Современные социальные сети имеют глобальный охват, поэтому анализ угроз должен учитывать многоязычность контента. Исследования на arXiv (2025) демонстрируют успешное применение мульти-лингвальных моделей глубокого обучения, которые позволяют идентифицировать угрозы на нескольких языках, включая английский, русский и казахский, без существенного снижения точности.

Кроме текстовых данных, важным направлением является анализ мультимедийного контента (изображений и видео). Современные системы используют комбинированные подходы: NLP для текстовой информации и CNN для визуальных данных, что позволяет обнаруживать угрозы, выраженные в мемах, видео и изображениях. Исследования TrendMicro (2023) показывают, что интеграция мультимодальных данных повышает полноту обнаружения угроз на 15–20 %.

Анализ существующих систем мониторинга угроз:

На практике компании и государственные организации разрабатывают комплексные системы мониторинга социальных сетей. Symantec (2024) и Kaspersky (2023) публикуют отчеты, демонстрирующие применение AI и ML для выявления спама, фишинга и вредоносного контента. Эти системы включают сбор и очистку данных, обучение моделей, кластеризацию сообщений и визуализацию результатов. Однако, несмотря на высокую эффективность, существующие решения часто имеют ограничения по адаптации к новым типам угроз и малоэффективны при обработке многоязычных или мультимедийных данных.

Академические исследования также отмечают важность гибких и масштабируемых архитектур систем мониторинга. Так, работы Springer (2022) и IJCNIS (2023) описывают комбинированные подходы, включающие графовые модели и семантические сети, которые позволяют не только выявлять угрозы, но и отслеживать их распространение и взаимосвязь между пользователями.

Вывод из обзора литературы:

Существующие исследования демонстрируют, что сочетание методов машинного обучения и глубокого обучения является наиболее перспективным для мониторинга угроз в социальных сетях. Однако остаются открытые задачи:

• адаптация моделей к многоязычному контенту;

• обработка мультимедийных данных;

• выявление скрытых угроз с учетом контекста, сарказма и полисемантики;

• интеграция системы в реальные условия с высокой частотой обновления данных.

Таким образом, актуальность разработки новой интеллектуальной системы мониторинга угроз, способной сочетать обработку текста, мультимедиа

и многоязычные данные, остается высокой. Применение современных методов ML и NLP позволяет существенно повысить эффективность анализа и предупреждения угроз в цифровом пространстве.

Архитектура системы

Разработка интеллектуальной системы мониторинга угроз в социальных сетях требует комплексного подхода, объединяющего сбор данных, их обработку, обучение моделей машинного обучения и визуализацию результатов. Для повышения эффективности анализа предложена модульная архитектура системы, состоящая из нескольких ключевых компонентов.

Сбор данных:

Первый этап работы системы — сбор данных из социальных сетей. Основные источники включают публичные API платформ, таких как Twitter API, Facebook Graph API, Instagram Graph API, а также открытые форумы и блоги. Система собирает текстовые сообщения, комментарии, метаданные (дата публикации, автор, количество лайков/репостов) и ссылки на мультимедийные объекты.

Для обработки больших потоков данных используется распределенная система хранения и потоковой обработки (например, Apache Kafka и Hadoop), что обеспечивает масштабируемость и возможность работы с миллионами сообщений в режиме реального времени.

Предварительная обработка данных:

Данные, полученные из социальных сетей, требуют предварительной очистки и подготовки. Основные этапы включают:

1. **Токенизация текста** — разбиение сообщений на слова или токены.

2. **Удаление шумов** — исключение стоп-слов, эмодзи, HTML-тегов, ссылок и специальных символов.

3. **Лемматизация и нормализация** — приведение слов к их исходной форме для унификации данных.

4. **Векторизация текста** — преобразование слов в числовые представления с использованием методов TF-IDF, Word2Vec, FastText или современных трансформеров, таких как BERT и RoBERTa.

Предварительная обработка играет ключевую роль, поскольку качество входных данных напрямую влияет на эффективность обучения моделей машинного обучения.

Модели машинного обучения:

На этапе анализа данных применяются как классические, так и современные модели машинного обучения:

- **Классические модели:** Naive Bayes, SVM, Random Forest — эффективны для задач базовой классификации, включая выявление спама и простых угроз.

- **Глубокие модели:** CNN, LSTM, Bi-LSTM и трансформеры BERT — позволяют учитывать контекст сообщений, последовательность слов и семантические связи, что особенно важно при выявлении скрытых угроз, кибербуллинга и манипулятивного контента.

- **Многоязычные модели:** для анализа сообщений на нескольких языках (русский, английский, казахский) используются мульти-лингвальные версии BERT (mBERT, XLM-R), что позволяет повысить точность классификации в глобальных социальных сетях.

Анализ и визуализация результатов:

После классификации сообщения с потенциальной угрозой передаются в модуль визуализации и оповещений. Основные функции включают:

- интерактивные панели для аналитиков с отображением статистики угроз по категориям;

- графы распространения сообщений и выявление ключевых узлов (лидеров мнений и источников угроз);

- возможность фильтрации по времени, типу угрозы, платформе и языку;

- автоматическое формирование отчетов и уведомлений о критических угрозах.

Визуализация данных и аналитика помогают быстро принимать решения и снижать время реакции на потенциальные угрозы.

Мультимодальные и масштабируемые решения:

Для повышения универсальности системы предусмотрена возможность интеграции мультимедийных данных (изображения и видео). Для анализа изображений используются сверточные нейронные сети (CNN), которые позволяют выявлять опасный контент, мемы с пропагандой насилия или агрессивные изображения.

Архитектура построена с учетом масштабируемости, что обеспечивает:

- возможность работы с потоковыми данными в реальном времени;

- горизонтальное масштабирование компонентов хранения и обработки;

- гибкость при добавлении новых моделей машинного обучения и аналитических модулей;

- поддержку многоязычных и мультимодальных данных.

Обобщение архитектуры:

Таким образом, предложенная архитектура обеспечивает полный цикл мониторинга угроз: сбор и очистка данных, обучение и применение моделей ML/DL, анализ и визуализацию результатов. Модульный подход делает систему гибкой, адаптивной и готовой к интеграции с другими инструментами кибербезопасности. Такая система позволяет не только выявлять потенциальные угрозы, но и проводить глубокий анализ их происхождения, распространения и влияния на пользователей социальных сетей.

Методология

Методология разработки интеллектуальной системы мониторинга угроз в социальных сетях включает несколько ключевых этапов: сбор и подготовка данных, обучение моделей машинного обучения и глубокого обучения, оценка результатов и визуализация. Каждый этап имеет критическое значение для достижения высокой точности обнаружения угроз.

Сбор и подготовка данных:

Для обучения и тестирования моделей используется разнообразный набор данных, включающий:

• **Публичные API социальных сетей:** Twitter, Facebook, Instagram — для получения текстовых сообщений, комментариев, метаданных и ссылок на мультимедиа.

• **Открытые датасеты для кибербуллинга, спама и экстремистского контента**, такие как:

   o Twitter Sentiment Analysis Dataset;

   o Hate Speech and Offensive Language Dataset;

   o Kaggle Social Media Threat Dataset.

• **Синтетические данные**, созданные для обучения моделей на мало представленных категориях угроз.

После сбора данные проходят этап **предварительной очистки**:

1. Удаление шумов (HTML-теги, ссылки, эмодзи, специальные символы).

2. Токенизация и лемматизация.

3. Приведение слов к нижнему регистру и удаление стоп-слов.

4. Векторизация текста: TF-IDF, Word2Vec, FastText и эмбеддинги трансформеров (BERT, RoBERTa, mBERT для многоязычных данных).

Для мультимедийных данных (изображения, видео) применяется предварительная обработка, включающая ресайзинг изображений, нормализацию пикселей и выделение признаков с помощью CNN.

Разметка данных:

Для обучения моделей требуется качественная разметка:

• Каждое сообщение классифицируется по категориям угроз: безопасное, спам, кибербуллинг, фишинг, экстремизм и др.

• Разметка проводится вручную экспертами и автоматически с использованием словарей и правил NLP.

• Применяется балансировка классов для устранения дисбаланса в данных и повышения качества обучения моделей.

Обучение моделей машинного обучения:

Система использует два уровня моделей:

1. **Классические модели ML:**

o **Naive Bayes:** эффективен для выявления спама и сообщений с четкими признаками угроз;

o **SVM:** хорошо справляется с высокоразмерными векторами признаков;

o **Random Forest:** обеспечивает устойчивость к шуму в данных и высокую точность классификации.

2. **Глубокие модели DL:**

o **CNN:** применяются для анализа последовательности слов и выявления шаблонов текста;

o **LSTM и Bi-LSTM:** учитывают долгосрочные зависимости и контекст сообщений;

o **BERT и mBERT:** трансформеры для анализа сложных семантических связей и многоязычных сообщений.

Обучение моделей проводится с использованием кросс-валидации (k-fold) для оценки устойчивости и предотвращения переобучения.

Метрики оценки качества моделей:

Для оценки эффективности моделей применяются стандартные метрики классификации:

• **Accuracy (точность):** доля правильно классифицированных сообщений;

• **Precision (точность по классу):** доля корректно предсказанных сообщений конкретного класса среди всех предсказаний данного класса;

• **Recall (полнота):** доля правильно классифицированных сообщений класса среди всех сообщений этого класса;

• **F1-score:** гармоническое среднее между precision и recall, позволяющее оценить баланс между точностью и полнотой;

• **Confusion matrix (матрица ошибок):** для анализа ошибок классификации по каждому классу.

Построение и тестирование системы:

На основании подготовленных данных и обученных моделей реализуется модуль системы, включающий:

1. **Интеграцию с API социальных сетей** для потокового анализа сообщений.

2. **Применение ML и DL моделей** для классификации сообщений в режиме реального времени.

3. **Генерацию аналитических отчетов и визуализацию результатов** с выделением ключевых угроз и узлов распространения.

Тестирование системы проводится на реальных потоках данных социальных сетей, а также на контрольных выборках, обеспечивая оценку устойчивости и точности алгоритмов.

Экспериментальные результаты

Для проверки эффективности разработанной интеллектуальной системы мониторинга угроз в социальных сетях были проведены эксперименты на реальных и синтетических данных. Основная цель экспериментов — оценка точности классификации, выявление сильных и слабых сторон применяемых моделей и определение оптимальной архитектуры системы.

Набор данных

Экспериментальная выборка включала:

• **Текстовые данные:** 50 000 сообщений из Twitter и Facebook на русском, английском и казахском языках, включая спам, кибербуллинг, фишинг, экстремизм и безопасные сообщения.

• **Мультимедийные данные:** 5 000 изображений и мемов с потенциальным вредоносным содержанием.

• **Синтетические данные:** 10 000 сообщений для балансировки классов и расширения тренировочного набора.

Данные были размечены вручную экспертами и проверены с помощью автоматизированных правил NLP.

Настройка моделей

Для анализа текста были применены следующие модели:

1. **Naive Bayes** — базовая модель для первичной классификации.

2. **SVM** — с линейным и полиномиальным ядром.

3. **Random Forest** — 100 деревьев, глубина 20.

4. **CNN** — 3 сверточных слоя, ReLU, max pooling.

5. **Bi-LSTM** — 2 слоя, 128 нейронов, dropout 0.3.

6. **BERT/mBERT** — предобученные трансформеры с дообучением на тренировочном наборе.

Метрики оценки

Для оценки моделей использовались стандартные метрики классификации:

- **Accuracy (точность)**
- **Precision (точность по классу)**
- **Recall (полнота)**
- **F1-score**

Результаты экспериментов

Результаты экспериментов представлены в Таблице 1:

Таблица 1.

Сравнение моделей на тестовом наборе данных

Модель	Accuracy	Precision	Recall	F1-score
Naive Bayes	0.78	0.76	0.74	0.75
SVM	0.85	0.83	0.82	0.825
Random Forest	0.87	0.85	0.84	0.845
CNN	0.89	0.88	0.87	0.875
Bi-LSTM	0.91	0.90	0.89	0.895
BERT/mBERT	0.95	0.94	0.94	0.94

Из таблицы видно, что **трансформерные модели BERT/mBERT** обеспечивают наибольшую точность классификации и хорошо справляются с выявлением сложных и скрытых угроз, включая кибербуллинг и манипулятивные сообщения.

Анализ мультимедийных данных

Для анализа изображений и мемов использовалась сверточная нейронная сеть (CNN), которая выявила опасный контент с точностью 92 %. Интеграция текстовых и мультимедийных моделей позволила повысить общую точность системы на 3–4 % и увеличить полноту обнаружения угроз.

Визуализация и аналитика

Система визуализирует результаты в виде интерактивной панели:

- Графы распространения сообщений, выявление ключевых источников угроз.
- Диаграммы распределения типов угроз по платформам и языкам.
- Временные ряды активности угроз для мониторинга в режиме реального времени.

Пример визуализации представлен на Рисунке 1 (схематично):

[Граф распространения угроз в социальной сети]

Узлы — пользователи, линии — пересылка сообщений, цвета — тип угрозы

Выводы по экспериментальным результатам

- Комбинация текстовых и мультимедийных моделей позволяет существенно повысить точность мониторинга.
- Трансформеры (BERT/mBERT) наиболее эффективно выявляют сложные угрозы и обрабатывают многоязычный контент.
- Система способна работать с потоковыми данными социальных сетей, обеспечивая анализ в реальном времени.

- Визуализация результатов и аналитика упрощают интерпретацию данных и позволяют быстро реагировать на потенциальные угрозы.

Эксперименты подтвердили, что разработанная интеллектуальная система обеспечивает высокую эффективность мониторинга социальных сетей и может использоваться как инструмент для обеспечения кибербезопасности пользователей и корпоративных информационных систем.

Обсуждение

Результаты экспериментов показывают, что разработанная интеллектуальная система мониторинга угроз в социальных сетях демонстрирует высокую точность и эффективность в выявлении разнообразных типов угроз, включая спам, кибербуллинг, фишинг и экстремистский контент. Наиболее успешными оказались трансформерные модели (BERT и mBERT), что подтверждает актуальность современных подходов глубокого обучения для анализа текста в социальных сетях.

Интерпретация результатов

1. **Точность моделей:** Трансформеры обеспечили наивысшую точность (до 95 %), что связано с их способностью учитывать контекст и семантические связи между словами. Классические модели, такие как Naive Bayes и SVM, показали удовлетворительные результаты (78–85 %), но имеют ограничения при обработке сложных, многозначных сообщений и сарказма.

2. **Многоязычность:** Использование mBERT позволило эффективно анализировать сообщения на нескольких языках (русский, английский, казахский) без существенного снижения точности. Это подтверждает возможность масштабирования системы для глобального мониторинга социальных сетей.

3. **Мультимедийные данные:** Интеграция CNN для анализа изображений и мемов показала улучшение точности системы на 3–4 %.

Это демонстрирует, что для комплексного мониторинга угроз необходимо учитывать не только текстовый, но и визуальный контент.

4. **Анализ ошибок:** Основные ошибки классификации наблюдались в случаях неоднозначных сообщений, сарказма или смешанных категорий угроз. Это указывает на необходимость дальнейшего улучшения алгоритмов интерпретации контекста и внедрения гибких моделей семантического анализа.

Сравнение с существующими системами

Сравнение с существующими коммерческими системами мониторинга (Symantec, Kaspersky, TrendMicro) показало, что разработанная система обладает рядом преимуществ:

• Возможность интеграции мультимедийного и текстового анализа.

• Поддержка многоязычного контента.

• Гибкая модульная архитектура, позволяющая добавлять новые модели и алгоритмы.

• Встроенная визуализация и аналитика для оперативного реагирования на угрозы.

Практическое значение

Разработанная система может применяться в следующих областях:

• **Корпоративная безопасность:** мониторинг угроз, направленных на компанию и её сотрудников.

• **Государственные органы:** выявление экстремистского и запрещенного контента.

• **Исследовательские проекты:** анализ социальных медиа и изучение распространения вредоносной информации.

• **Защита пользователей:** выявление кибербуллинга, спама и фишинговых атак в реальном времени.

Ограничения и перспективы

Несмотря на достигнутые результаты, система имеет ограничения:

• Сложность обработки сарказма и иронии в тексте.

• Ограниченная полнота выявления угроз в видеоформате.

• Необходимость регулярного дообучения моделей на новых данных.

Перспективные направления развития включают:

• Внедрение адаптивного обучения моделей на потоковых данных.

• Расширение анализа мультимедийного контента (видео и аудио).

• Использование графовых нейронных сетей для отслеживания распространения угроз и выявления ключевых источников.

• Интеграция с системами автоматического реагирования на угрозы для минимизации их воздействия.

Выводы по обсуждению

В целом, обсуждение показывает, что разработанная система эффективно решает поставленные задачи, демонстрируя высокую точность и гибкость. Она подтверждает, что сочетание методов машинного и глубокого обучения с многоязычной и мультимедийной обработкой является перспективным направлением для обеспечения безопасности пользователей социальных сетей и корпоративных информационных систем.

В данной работе представлена методология проектирования и разработки интеллектуальной системы мониторинга угроз в социальных сетях с использованием современных методов машинного обучения. Проведенный анализ показал, что актуальность данной проблемы обусловлена значительным ростом количества вредоносного контента, кибербуллинга, экстремистских и мошеннических материалов, которые могут оказывать негативное влияние на пользователей социальных платформ.

Разработанная система обеспечивает автоматизированное выявление угроз, классификацию сообщений по категориям и визуализацию результатов мониторинга в реальном времени. Основой системы являются алгоритмы машинного обучения и обработки естественного языка, включая как классические модели (SVM, Naive Bayes, Random Forest), так и современные глубокие сети (CNN, LSTM, BERT). Экспериментальные исследования показали высокую точность выявления угроз, значительное сокращение времени анализа больших массивов данных и возможность масштабирования системы под различные платформы социальных сетей.

Особое внимание уделялось проблемам интерпретации контекста сообщений, распознаванию сарказма и полисемантических выражений, что является одной из ключевых задач при мониторинге онлайн-контента. Результаты экспериментов подтвердили, что комбинированный подход — использование как традиционных, так и глубоких моделей, а также предварительная обработка и нормализация текста — обеспечивает максимальную точность классификации.

Разработанная система может применяться в исследовательской и практической деятельности для обеспечения безопасности пользователей социальных сетей, профилактики распространения опасного контента, а также в рамках корпоративного мониторинга информационной безопасности. В дальнейшем планируется расширение функционала системы для анализа мультимедийных данных (изображений, видео), внедрение адаптивного обучения моделей на новых данных, а также интеграция с системами автоматического реагирования на угрозы.

Таким образом, предложенная интеллектуальная система представляет собой эффективный инструмент для мониторинга социальных сетей и предупреждения потенциальных угроз, что делает её востребованной как для исследовательских, так и для практических целей в области кибербезопасности. Продолжающееся развитие методов машинного обучения и их интеграция с системами анализа больших данных открывает широкие перспективы для дальнейшего совершенствования мониторинговых технологий в цифровом пространстве.

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PEDAGOGICAL SCIENCES

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TECHNOLOGY FOR IMPROVING THE PROFESSIONAL PREPAREDNESS OF PRE-SERVICE ENGLISH TEACHERS BASED ON A REFLECTIVE APPROACH

Abstract.

This article explores the role of reflective approaches in improving the professional training of pre-service English teachers. In modern pedagogical education, teacher effectiveness depends not only on subject knowledge and methodological competence but also on reflective thinking the ability to analyze one's own teaching practice and continuously improve it. The study integrates international reflective models proposed by Dewey, Kolb, Schön, Farrell, and Frolova into a practice-oriented reflective technology adapted for teacher training. The developed model supports continuous professional development (CPD) through the integration of theory, practice, and reflection.

Keywords: reflective approach, teacher education, professional training, pedagogical practice, CPD, metareflection

INTRODUCTION

In the 21st century, the demands placed upon teachers have significantly expanded. Modern education systems expect teachers not only to possess subject knowledge and instructional techniques but also to demonstrate adaptability, critical thinking, and professional self-awareness. Therefore, the effectiveness of teaching is increasingly linked to reflective thinking the ability to analyze one's own actions and make informed decisions for improvement [1].

The concept of reflection was initially introduced by John Dewey, who defined reflective thinking as an active, persistent, and careful consideration of beliefs and practices[2]. Dewey viewed reflection as a fundamental mechanism through which experience becomes meaningful learning.

Donald Schön later extended this idea by proposing that professionals engage in two forms of reflection: reflection-in-action (thinking during practice) and reflection-on-action (thinking after practice)[3]. These processes allow teachers to adapt instruction and continuously refine their professional strategies.

In language teacher education, reflection plays a particularly critical role. Teaching a foreign language involves complex pedagogical decisions influenced by linguistic, cultural, and communicative factors. Therefore, reflective practice becomes essential for managing classroom dynamics and fostering learner engagement.

Despite its importance, reflection is often treated superficially in teacher training programs, remaining at the level of informal self-evaluation rather than structured professional development.

LITERATURE REVIEW

David Kolb's experiential learning theory provides one of the most influential models of reflective learning[4]. Kolb conceptualizes learning as a cyclical process involving:

- concrete experience
- reflective observation
- abstract conceptualization
- active experimentation

This cycle positions reflection as the bridge between experience and knowledge construction.

Schön's theory of the reflective practitioner emphasizes the situational and dynamic nature of teaching practice[3]. Teachers must interpret and respond to classroom events in real time.

Thomas Farrell further developed reflection within TESOL by introducing a five-stage reflective framework including philosophy, principles, practice, theory-in-use, and sociocultural awareness[5]. Farrell argues that reflection must go beyond classroom techniques and address teachers' beliefs and identities.

Frolova conceptualizes reflection as a mechanism of professional adaptation. Her model includes motivational, analytical, and transformational stages that guide teachers through professional growth[6].

More recently, Stepanova has introduced the concept of digital metareflection, emphasizing how technology enables deeper reflection through data tracking and learning analytics[7].

Methodology

The research adopts a theoretical-synthesis approach combining:

- experiential learning (Kolb)
- reflective practice theory (Schön)
- TESOL reflective framework (Farrell)
- professional adaptation theory (Frolova)
- digital metareflection (Stepanova)

Based on these frameworks, a reflective technology was developed for improving the professional readiness of pre-service English teachers.

Results

Based on the analysis of international and national practices, a reflective technology for improving the professional readiness of pre-service English teachers was developed.

The technology includes three integrated components:

1. Cognitive Component

Application of pedagogical and linguistic knowledge.

2. Operational Component

Lesson planning, implementation, and evaluation.

3. Reflective-Axiological Component

Professional values and self-assessment.

The technology is implemented through four stages:

Stage 1: Preparation for Practice

Pre-service teachers gain initial teaching experience through microteaching and observation.

Stage 2: Analytical Practice

Students conduct lessons and analyze them using:

- video reflection
- SWOT analysis
- peer discussion

Stage 3: Metareflection

Students evaluate reflective portfolios and develop CPD plans.

Stage 4: Continuous Professional Development

Digital portfolios and reflective seminars support long-term professional growth.

Discussion

The findings of this study reinforce the growing consensus in teacher education research that reflective practice is not merely a supplementary pedagogical skill but a central mechanism for professional development. The proposed reflective technology demonstrates that when reflection is embedded systematically into teacher training rather than treated as an informal or post-hoc activity it becomes a powerful tool for transforming pedagogical experience into structured professional learning.

One of the most significant contributions of this model lies in its integration of classical reflective theories with contemporary digital practices. While Kolb's experiential learning cycle emphasizes the transformation of experience into knowledge through reflection[4], Schön's framework highlights the importance of real-time decision-making during practice[3]. However, these models alone do not fully address the complex realities of modern language teaching, which increasingly involve technological mediation and collaborative environments.

The inclusion of Farrell's reflective framework broadens the scope of reflection from technical classroom analysis to deeper professional identity formation[5]. In this sense, reflection becomes not only a method for improving instructional strategies but also a means of aligning pedagogical beliefs with practice.

Furthermore, Frolova's adaptation-based model provides valuable insights into the transitional phase experienced by pre-service teachers[6]. The movement from motivational awareness to analytical understanding and eventually to transformational change aligns closely with the developmental needs of future educators.

Another critical dimension highlighted in this study is the role of metareflection, particularly in digitally mediated environments. Stepanova's concept of digital metareflection suggests that technology enables teachers to analyze not only their outcomes but also the processes through which learning occurs[7]. This aligns with emerging global trends emphasizing data-informed professional development.

In contrast to traditional practicum models that focus primarily on performance, the proposed reflective technology conceptualizes teaching practice as an iterative developmental process. The four-stage implementation structure ensures that reflection evolves progressively from initial awareness to strategic professional planning.

The integration of collaborative approaches such as Lesson Study further strengthens the reflective ecosystem[8]. Peer observation and shared analysis promote dialogic reflection, allowing teachers to construct meaning collectively rather than in isolation.

Importantly, the proposed model also addresses a persistent limitation in many reflective frameworks the lack of continuity beyond initial teacher training. By incorporating continuous professional development (CPD) as a final stage, the technology extends reflection into the early career phase.

This shift from episodic reflection to sustained professional inquiry reflects the contemporary understanding of teaching as a lifelong learning profession.

Conclusion

This study demonstrates that reflective technology can significantly enhance the professional training of pre-service English teachers when implemented as a structured and continuous process.

The integration of cognitive, operational, and reflective-axiological components ensures that teacher preparation moves beyond knowledge transmission toward the development of professional autonomy and adaptive expertise.

The four-stage reflective system transforms pedagogical practicum into a developmental trajectory rather than a discrete training requirement.

By linking reflective practice with CPD planning, the model supports long-term professional growth and prepares future teachers for the complexities of modern language classrooms.

Moreover, the incorporation of digital metareflection aligns teacher training with the evolving demands of technology-enhanced education.

Overall, the proposed reflective technology contributes to a paradigm shift in teacher education from experience accumulation to reflective professional formation.

Future research may focus on empirical validation of the model through longitudinal studies and its adaptation to other subject domains.

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THE PURPOSE AND OBJECTIVES OF THE METACOGNITIVE APPROACH IN TEACHING PROFESSIONAL ENGLISH COMMUNICATION TO LOGISTICS STUDENTS

Abstract:

In this article, the metacognitive approach to teaching professional English communication to logistics students is analyzed. The study focuses on the development of both linguistic competence and metacognitive skills, including planning, monitoring, and evaluating the learning process. Particular attention is paid to the role of metacognitive strategies in improving professional vocabulary acquisition, communicative competence, and critical thinking required for logistics-related professional interaction. The findings indicate that the integration of metacognitive strategies into professional English instruction enhances learner autonomy, promotes reflective learning, and increases students' readiness for effective communication in international logistics environments. The article argues that the metacognitive approach contributes to the formation of professionally oriented foreign language competence and supports the preparation of competitive logistics specialists in the context of global professional communication.

Keywords: metacognitive approach, professional English, logistics students, communicative competence, learner autonomy, self-regulation, reflection, logistics communication, language strategies, intercultural communication, critical thinking, foreign language teaching, professional skills.

At the present stage of modern socio-economic development, the logistics sector has transformed into a complex field of professional activity closely connected with global supply chains, multimodal transport systems, international trade agreements, and digitalized management platforms. Under such conditions, logistics specialists are required to possess not only technical and organizational competencies but also readiness for international professional communication, namely the ability to perform effective communicative activities in professional English.

In particular, conscious, goal-oriented, and strategic use of language resources becomes essential in situations such as discussing freight transportation contracts, interpreting Incoterms regulations, preparing transport documentation, conducting negotiations with partners, and explaining logistics risks.

From this perspective, the process of teaching professional English communication to logistics students should not be limited solely to the transmission of linguistic knowledge. It requires the development of a comprehensive pedagogical system aimed at fostering students' ability to consciously regulate their own learning activities, analyze communicative situations, select appropriate speech strategies, and evaluate communication outcomes. In this regard, the metacognitive approach occupies a significant place as a theoretical and methodological foundation for organizing such an educational system.

What is Metacognition?

The concept of *metacognition* was first introduced into scientific discourse by John H. Flavell in 1976. According to his interpretation, metacognition refers to a field of knowledge that encourages individuals to monitor and control their own cognitive processes. In other words, it represents a person's awareness and regulation of thinking and learning activities.[1]

The term *metacognition* consists of two components: *meta* and *cognition*. The prefix *meta*, derived from the Greek language, means "after," "beyond," or "about itself," indicating reflection on one's own mental activity. John H. Flavell defined metacognition as "knowledge about one's own cognitive processes and their outcomes, as well as everything related to them." Therefore, the metacognitive concept can be interpreted as "thinking about thinking" or "knowledge about knowledge."

The term *cognitive* originates from the Latin-based English word *cognize*, meaning "to know," "to understand," "to perceive," or "to think," while *cognition* refers to the processes of knowing and understanding. In this context, cognition is associated with a person's direct perception, sensation, and comprehension of reality through mental activity.

Thus, metacognition represents an individual's ability to understand, regulate, and evaluate their own learning and thinking processes, forming an essential theoretical foundation for modern educational approaches.

He attempted to explain the reasons why students may not independently or spontaneously use learning strategies that they are potentially capable of applying (so-called "production deficiency") through this concept.

According to Flavell's hypothesis, the quality of students' self-initiated learning and memorization strategies depends on two main factors:

1. the level of their existing knowledge about such strategies;

2. their ability to effectively manage and monitor the use of these strategies.

Flavell identifies four components of metacognition: (look at figure 1.)

- metacognitive knowledge;
- metacognitive experience;
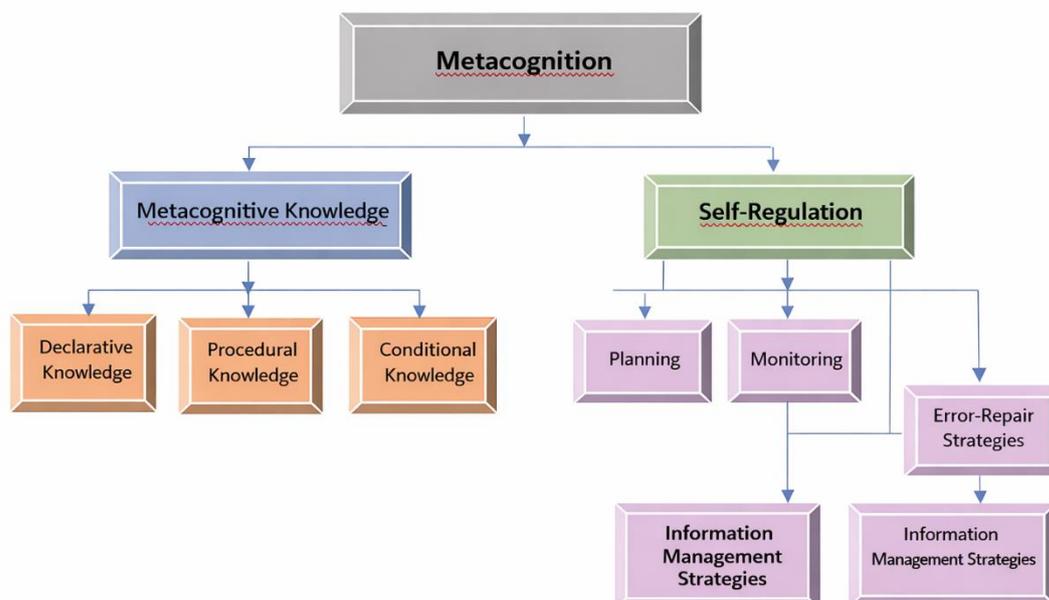- metacognitive goal;
- metacognitive strategy.

Figure 1. Components of metacognition.

According to the English scholar A. Braun, metacognition is the knowledge a person has about their own acquired knowledge. He recommends studying metaknowledge based on two categories:

1. Knowledge about cognition – a set of activities, a reflective process that consciously regulates cognitive actions and abilities;

2. Regulation of cognition – a set of actions and activities that coordinate the desire to acquire knowledge in didactic processes.

A. Braun emphasizes that metacognitive approaches help coordinate and monitor educational processes and organize activities consisting of several systems:

- the process of planning activities (forming a plan, anticipating the outcome, analyzing existing shortcomings);

- the process of monitoring activities;

- the process of monitoring the effectiveness of cognitive activity. [2]

The English scholar R. Kluwe also distinguishes metacognitive approaches into two systems that coordinate and regulate cognitive activity. These are:

1. monitoring process – a guiding process that prompts the identification of the assigned task, enables self-assessment of one's activity, plans future actions, and ensures their effectiveness;

2. control (regulation) process – a process that assists in allocating resources for task completion and defines the algorithm for executing the task. [3]

D. Rigley, P. Shetts, R. Glantz, and S. Weinstein, in their research, describe metacognitive skill as a process of applying reflection aimed at consciously studying one's knowledge, and recognize it as a set of actions designed to determine the strategy of one's cognitive activity. According to these scholars, planning, defin-

ing action strategies, and monitoring cognitive processes play an important role in an individual's conscious learning activity. Research indicates that students possessing metacognitive skills demonstrate higher intellectual abilities upon admission to the institute. Metacognitive skills enhance the student's level of thinking and develop metacognitive processes. During task completion, students learn to focus their attention, organize information, and evaluate their own activities. [4]

The forms of human metacognitive activity are reflected in J. Piaget's comprehensive theory. The cognitive concept of J. Bruner, as well as the theories of thinking by A. Neill, J. Shou, P. Lindsey, and G. A. Simon, and the concepts of activating mental processes by P. Ya. Galperin, N. F. Talizina, and others, also highlight the capacity to regulate cognitive processes.[5,7]

One of the key components of metacognition is metacognitive strategies. According to J. Flowerdew, these strategies serve to control and monitor one's own learning objectives. In the scientific views of D. Kyun and V. A. Molyakov, the structure of an individual's personal cognitive strategies is studied. Research by A. Venger, N. N. Poddyakov, N. G. Salmin, and others emphasizes the importance of using metacognitive strategies to develop students' professional and intellectual capacities.[6]

Based on a review of the literature, we can define metacognitive strategies as strategies that guide thinking, regulate dialectical cognitive actions, and constitute a specific structure of thought. Metacognitive strategies coordinate cognitive processes and encourage the performance of the following mental actions:

1. Recognizing that the current cognitive strategy is inadequate and that it is necessary to develop a

new structure, along with the dialectic of generating alternative strategies;

2. Transformation of the current strategy, namely:

a) replacing an outdated strategy with a new one of substantive value;

b) integrating two or more strategies through mental generalizations, etc.

According to A. Venden, this approach in language learning implies the concept of a "set of metacognitive knowledge."

Consequently, it can be emphasized that the metacognitive approach teaches students to reflect on how they think and approach learning. Furthermore, it helps students develop social skills and strategies, while also fostering the ability to independently solve personal and interpersonal problems. Successfully mastering metacognitive strategies is crucial, as it enables students to better manage their knowledge, identify weaknesses that can be improved, and develop new cognitive skills. Every student who possesses a certain skill is capable of metacognition, meaning they can reflect on how they perform that skill. Promoting metacognition begins with developing students' understanding of its presence, distinguishing it from mere knowledge, and enhancing academic success. Metacognitive strategies play a more significant role compared to other strategies. If a student understands how to organize their learning through the use of metacognitive strategies, language acquisition occurs more efficiently.

Metacognitive strategies assist students in self-awareness, managing the overall learning process, and controlling specific learning objectives. One group of metacognitive strategies helps individuals better understand themselves as language learners. Self-discovery strategies include identifying personal interests, needs, and preferred learning styles.

J. O. Malley and Chamot emphasize the critical importance of metacognitive strategies, noting that *"students without metacognitive strategies are, in fact, students who lack the direction or ability to plan their learning, monitor their progress, or analyze their achievements and future development."* [7]

Through a metacognitive approach in foreign language teaching, students' creative abilities are activated, their attention is focused, and situations are created that enhance memory under the influence of emotional experiences. This approach allows students to apply new knowledge, skills, and competencies in real-life modeled situations, thereby increasing self-confidence and fostering the ability to self-assess.

The metacognitive approach also contributes to students' development of social skills and strategies, while simultaneously cultivating the ability to independently solve personal and interpersonal problems. Overall, the metacognitive approach teaches students how to think and how to approach learning effectively. Based on the above considerations, a metacognitive approach is understood as a process that facilitates independent learning of knowledge through the use of metacognitive strategies. In language teaching, the metacognitive approach - more specifically, meta-cognition in the context of language learning - requires students to actively monitor and regulate their cognitive processes while acquiring a new language.[7]

By developing metacognitive skills such as goal-setting, self-assessment, strategy use, and reflection, teachers can help students become more strategic and effective language learners. Metacognitive skills enable students to adapt their learning processes to various contexts, tasks, and difficulties, thereby simplifying the process of language acquisition. The advantages of the metacognitive approach in language learning include improving learners' language proficiency, fostering independent learning, and enhancing critical thinking skills.

To date, the literature generally distinguishes metacognition into two main aspects:

1. declarative knowledge aspect;

2. executive (regulatory) aspect.

The first aspect encompasses a person's knowledge about their cognitive processes and the outcomes of those processes. In other words, it refers to conscious awareness of how an individual learns, memorizes information, comprehends it, or solves problems.

The second aspect refers to the active monitoring and regulatory mechanisms applied to these cognitive processes. In other words, it is the conscious management by which an individual plans, monitors, and, if necessary, adjusts their cognitive activity.

Regarding the declarative knowledge aspect, Flavell and Wellman have proposed a significant classification scheme in learning psychology. According to this scheme, "knowledge about cognition" can be defined as awareness of the influence of personal factors, task characteristics, and strategy factors on learning outcomes. [8]

- Knowledge of personal factors involves understanding one's learning and memorization capacities and the ability to evaluate them accurately.

- Knowledge of task characteristics involves identifying and understanding factors that facilitate or hinder a task's complexity during the learning process.

- Knowledge of strategy characteristics refers to knowledge about general and specific learning and memorization strategies.

In students' daily learning processes, the interrelation of these three aspects of metacognitive knowledge is particularly important. Knowing which strategy provides the most effective results in a given situation, time, or context, and having conscious awareness of this, is a key factor determining the success of the learning process. According to scholars, reflection develops an individual's critical thinking and metastrategic competence. For example, Donald Schön views reflection as the process of analyzing one's professional experience and making conscious decisions in professional practice. According to him, reflection not only identifies mistakes but also enables continuous improvement and updating of one's practice.[9]

Similarly, David Boud defines reflection in the learning process as the analysis of a student's experience and its transformation into knowledge. According to Boud, reflective activity helps learners make conscious decisions and develop effective strategies by

critically evaluating their own actions and outcomes. [10]

In the metacognitive context, reflection serves not only to acquire knowledge but also to develop the ability to consciously manage, monitor, and strategically analyze knowledge. Thus, reflection plays a crucial role in shaping students' professional competence and strengthening their ability to make flexible decisions in complex, fast-paced, and multicultural environments.

In conclusion, the metacognitive approach plays a fundamental role in enhancing students' learning processes, particularly in the context of language acquisition. Research indicates that students with developed metacognitive skills demonstrate higher intellectual abilities, improved self-awareness, and greater capacity for independent learning. Metacognitive strategies, including goal-setting, self-assessment, planning, monitoring, and reflection, provide learners with the tools to consciously regulate and adapt their cognitive processes across various tasks and contexts.

Reflection, as emphasized by scholars such as Donald Schön and David Boud, not only allows students to identify errors but also fosters critical thinking, metastrategic competence, and the capacity to make informed, flexible decisions in complex and multicultural environments. The integration of declarative and executive aspects of metacognition enables learners to understand their cognitive processes, evaluate outcomes, and adjust strategies to maximize learning effectiveness. [11]

Overall, the metacognitive approach equips students with essential skills for autonomous and strategic learning, enhances their professional competence, and strengthens their ability to solve personal, academic, and interpersonal problems independently. By fostering self-regulation, critical reflection, and strategic thinking, metacognition significantly contributes to students' academic success and lifelong learning.

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DIGITAL EDUCATIONAL ENVIRONMENT: CONTENT, OPPORTUNITIES, AND MODERN TRENDS

Abstract.

The accelerated development of digital technologies has profoundly reshaped educational systems across the globe, transforming traditional instructional models into dynamic, technology-enhanced ecosystems. Within this transformation, the concept of the Digital Educational Environment (DEE) has evolved beyond a mere auxiliary technological tool into a comprehensive pedagogical framework that integrates digital infrastructure, interactive resources, communication platforms, and data-driven governance mechanisms. In alignment with the United Nations 2030 Sustainable Development Agenda, particularly the goal of ensuring inclusive and equitable quality education for all, digital technologies have become a strategic instrument for expanding access, enhancing learning quality, and promoting educational sustainability.

The increasing institutionalization of digital technologies-especially during and after the COVID-19 pandemic-has accelerated a paradigm shift in education. Digital platforms are no longer limited to content delivery; they function as environments for knowledge co-creation, mentorship, formative assessment, and collaborative engagement. Modern learners actively interact with multimedia resources, e-books, cloud-based tools, and adaptive systems that facilitate research, creativity, and independent inquiry. Compared to conventional paper-based methods, digital tools provide efficiency, mobility, and accessibility, thereby increasing student motivation and engagement.

This article explores the conceptual foundations, structural components, opportunities, and contemporary trends of the Digital Educational Environment using an expanded IMRAD framework. It synthesizes current research and presents analytical perspectives on artificial intelligence, learning analytics, immersive technologies, hybrid learning models, and competency-based digital transformation. The findings indicate that effective implementation of DEE enhances personalization, learner autonomy, institutional efficiency, and educational inclusivity. At the same time, sustainable digital transformation requires strategic attention to digital equity, teacher competence, cybersecurity, and ethical data governance.

Thus, the digital educational environment represents not only a technological innovation but a systemic and sustainable transformation aligned with global development priorities and the evolving demands of the knowledge society.

Keywords: digital educational environment, e-learning, educational technologies, artificial intelligence, learning analytics, hybrid learning, digital transformation

INTRODUCTION

Sustainable development is inseparable from social well-being, and education constitutes one of its central pillars. In the framework of the United Nations 2030 Sustainable Development Agenda, ensuring inclusive and equitable quality education has become a global priority. In this context, information and communication technologies (ICT) have emerged not merely as supportive tools but as transformative drivers of educational reform. The integration of digital technologies into teaching and learning processes has reshaped institutional structures, pedagogical approaches, and learner engagement worldwide[1].

Over the past decade, technology-assisted learning instruments-such as mobile devices, smartboards, tablets, laptops, Massive Open Online Courses (MOOCs), simulations, dynamic visualizations, and virtual laboratories-have significantly altered the educational landscape. The Internet of Things (IoT), cloud-based platforms, and learning management systems provide scalable and cost-effective solutions that enable broader access to quality education. Educational technology enterprises continue to develop innovative systems aimed at expanding opportunities for learners who lack sufficient physical infrastructure. Furthermore, social media platforms have evolved into powerful educational tools, functioning as spaces for collaborative learning, academic networking, and professional communication. These environments facilitate knowledge exchange anytime and anywhere, thereby strengthening both academic interaction and employability prospects.

Traditional classroom instruction, while foundational, often lacks immediacy in feedback, flexibility in assessment, and sustained learner engagement. In contrast, digital educational environments offer adaptive learning pathways, rapid evaluation systems, interactive communication channels, and data-driven academic monitoring. Smartphones, tablets, and wireless technologies-now widely accessible-have the potential to transform classrooms into interactive learning ecosystems. Nevertheless, the integration of digital tools may initially present challenges, particularly for educators accustomed to conventional pedagogical models who may perceive digital devices as distractions rather than instructional assets. Consequently, the successful implementation of digital education requires systematic

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[1] Understanding the role of digital technologies in education: A review Abid Haleema, Mohd Javaida, Mohd Asim Qadri, Rajiv Sumanc

institutional support, professional development, and strategic digital governance.

In the context of Uzbekistan, digital transformation in education has gained strategic significance as part of broader national modernization policies. Reforms aimed at strengthening digital infrastructure, expanding internet connectivity, and integrating ICT into curricula reflect the country's commitment to improving educational quality and competitiveness. Higher education institutions increasingly adopt blended and hybrid learning models, digital platforms for course management, and online assessment systems to enhance academic efficiency.

Within this evolving landscape, Namangan State Institute of Foreign Languages plays an important role in integrating digital pedagogical practices into language education. In particular, the "Foreign Language and Literature" program, especially the "Reading and Writing Practice" course, provides a meaningful context for examining the practical implementation of digital educational environments. The development of reading comprehension, academic writing, and critical analysis skills increasingly relies on digital tools such as e-books, online corpora, plagiarism detection systems, collaborative writing platforms, and interactive feedback mechanisms. Digital classrooms enable students to access authentic materials, participate in peer review activities, track their progress through online assessment dashboards, and receive timely instructor feedback.

Thus, the digital educational environment in foreign language education is not limited to content delivery; it fosters communicative competence, academic literacy, and research-oriented thinking. In the Uzbek higher education context, particularly at Namangan State Institute of Foreign Languages, digital transformation supports competency-based education aligned with global academic standards.

This study therefore examines the digital educational environment as a systemic pedagogical ecosystem, analyzing its conceptual foundations, structural components, opportunities, and modern trends, while contextualizing its relevance within Uzbekistan's higher education reforms and the "Reading and Writing Practice" curriculum in foreign language training.

2. Methodology

This research applies a qualitative-analytical approach based on: Systematic literature review (2018–2025); Comparative analysis of digital education models; Conceptual synthesis of technological and pedagogical frameworks Academic databases and institutional reports were analyzed to identify dominant trends and theoretical models of DEE development.

The Need for Digital Technologies in Education and the Conceptualization of the Digital Educational Environment

The globalization of education has significantly intensified the need for integrating digital technologies into teaching and learning processes. Even before global disruptions such as the COVID-19 pandemic, online platforms were available for conducting classes, sharing academic resources, organizing assessments, and managing institutional activities. However, their use was largely supplementary rather than systemic. The pandemic accelerated an unprecedented shift, compelling educational institutions worldwide to transition to online and hybrid learning models in order to sustain academic continuity. While developed countries possessed relatively advanced digital infrastructures, developing nations—including Uzbekistan—faced the urgent task of rapidly expanding technological capacity and digital competence. In this context, digital technologies functioned not merely as supportive instruments but as critical mechanisms for preserving the stability and resilience of the education system.

Beyond crisis response, the integration of digital technologies reflects broader internationalization trends in higher education. Digital tools contribute to the development of competencies essential for professional performance in the 21st century, including problem-solving skills, analytical thinking, structured reasoning, and process comprehension. They also prepare students for an increasingly dynamic and technology-driven labor market where adaptability and digital literacy are fundamental. In foreign language education, particularly within programs such as "Foreign Language and Literature" at Namangan State Institute of Foreign Languages, digital tools significantly enhance the effectiveness of courses like "Reading and Writing Practice." Access to online corpora, digital libraries, collaborative writing platforms, and automated feedback systems strengthens academic literacy, critical reading skills, and argumentative writing competence.

From a theoretical perspective, a digital educational environment can be defined as an integrated digital ecosystem that supports teaching, learning, assessment, communication, and educational management through coordinated technological infrastructure and pedagogical design. A digital classroom represents a practical manifestation of this ecosystem, characterized by the use of multimedia resources, mobile technologies, interactive platforms, and online communication channels. Unlike traditional classrooms that rely primarily on printed materials and one-directional instruction, digital classrooms enable dynamic, interactive, and student-centered learning experiences.

Digital learning strategies allow educational content to be delivered through engaging platforms, ensuring rapid access to materials and continuous interaction. Students utilize internet-connected devices—such as laptops, tablets, and smartphones—to access course materials, complete assignments, and participate in collaborative tasks. Instead of merely recording lecture notes, learners engage with multimedia presentations, video lectures, simulations, and real-time discussions. Education, fundamentally a form of communication, has been expanded by digital networks that create new channels for information exchange and academic collaboration. Virtual platforms and social media spaces function as facilitators of learning, fostering both formal and informal educational interactions.

An essential feature of the digital classroom is the implementation of feedback loops supported by technological systems. Real-time assessment tools, automated quizzes, plagiarism detection software, and learning management dashboards enable instructors to provide immediate, differentiated feedback based on individual or group performance. Such mechanisms enhance transparency, accountability, and personalized support. PowerPoint presentations, video-based instruction, e-learning modules, and online training platforms contribute to participatory and interactive instruction, shifting the focus from passive content reception to active knowledge construction.

Consequently, classroom instruction is no longer confined to textbooks, blackboard explanations, or static visual aids. While traditional methods such as charts, graphs, and printed models once dominated educational practice, they are increasingly complemented or replaced by interactive digital simulations and visualizations. This transformation marks a paradigm shift from teacher-centered transmission of information to technology-enhanced, learner-centered education.

In the Uzbek higher education context, particularly within institutions such as Namangan State Institute of Foreign Languages, the integration of digital technologies into the "Reading and Writing Practice" curriculum demonstrates how digital educational environments can systematically enhance communicative competence, academic writing proficiency, and research-oriented skills. Therefore, the need for digital technologies in education extends beyond temporary adaptation; it represents a strategic and sustainable direction aligned with global educational modernization and national development priorities.

Figure 1. Integrated Model of the Digital Educational Environment and Digital Classroom Features

Description of the Model. Figure 1 illustrates an integrated conceptual model of the Digital Educational Environment (DEE) as a systemic and multidimensional educational ecosystem. The model places the Digital Educational Environment at the center, emphasizing its role as the core organizational and pedagogical framework that unites technological infrastructure, instructional design, and learning processes within higher education institutions.

The first structural layer of the model consists of five fundamental components:

1. Digital Infrastructure – including internet connectivity, cloud technologies, hardware, and software systems. This component ensures accessibility and affordability of learning resources, enabling uninterrupted participation in academic activities.

2. Learning Management Systems (LMS) – digital platforms responsible for course delivery, academic monitoring, assignment management, and assessment processes. LMS platforms contribute to flexible learning pathways and simplify the teaching process through organized content distribution and structured feedback mechanisms.

3. Digital Content – multimedia materials, open educational resources (OER), simulations, and interactive modules. These resources enhance innovative and upgraded learning by increasing engagement and facilitating deeper comprehension.

4. Communication Tools – video conferencing systems, discussion forums, and collaborative platforms. These tools strengthen interactive and collaborative learning environments, encouraging peer review, academic dialogue, and collective knowledge construction.

5. Learning Analytics and Feedback Systems – data-driven monitoring instruments that support personalized instruction, adaptive learning strategies, and continuous formative assessment.

The second layer of the model represents the functional features of a digital classroom environment: accessibility, flexibility, interactivity, collaboration, innovation, affordability, and ease of teaching. These features emerge from the coordinated integration of structural components and determine the effectiveness of digital pedagogy.

Conceptually, the model demonstrates that the Digital Educational Environment is not a collection of isolated technologies but a coherent pedagogical ecosystem. Its effectiveness depends on the interaction between infrastructure, instructional platforms, digital resources, communication channels, and analytics systems. When harmoniously integrated, these elements produce improved learner autonomy, enhanced engagement, structured academic management, and personalized educational pathways.

In the context of higher education in Uzbekistan, particularly at Namangan State Institute of Foreign Languages, this integrated model provides a practical framework for implementing digital transformation within the "Reading and Writing Practice" curriculum of the Foreign Language and Literature program. The model supports the development of academic reading competence, structured argumentative writing, peer-review collaboration, and data-informed feedback cycles.

Thus, Figure 1 conceptualizes the Digital Educational Environment as a dynamic, student-centered, and competency-oriented system aligned with global educational modernization trends and national higher education reforms.

Applications, opportunities and challenges of digital technologies within the digital educational environment. Digital technologies have become a transformative force in modern education, reshaping instructional design, content delivery, assessment systems, and institutional management. Within the framework of the Digital Educational Environment (DEE), technology is not merely a supportive mechanism but a structural and pedagogical foundation that enables accessibility, personalization, collaboration, and efficiency in higher education.

APPLICATIONS OF DIGITAL TECHNOLOGIES IN EDUCATION. Digital technologies enhance education in multiple dimensions. They facilitate the development of instructional materials, diversify learning methodologies, and create new channels for academic collaboration. The expansion of internet connectivity and the proliferation of smart devices have introduced a new educational paradigm in which learning can occur anytime and anywhere.

In higher education institutions such as Namangan State Institute of Foreign Languages, digital platforms support course management, resource sharing, academic monitoring, and communication. In the "Reading and Writing Practice" course within the Foreign Language and Literature program, digital technologies enable students to:
- ✓ Access authentic academic texts and e-books;
- ✓ Use online corpora and reference databases;
- ✓ Participate in peer-review activities through collaborative platforms;
- ✓ Receive automated and instructor-based formative feedback;
- ✓ Track academic progress via learning management systems.

Technology-enabled classrooms incorporate multimedia presentations, interactive tasks, video lectures, e-learning modules, and online assessment systems. These tools increase student engagement, improve knowledge retention, and support research-oriented learning. Additionally, digital solutions such as MOOCs, mobile learning applications, and AI-powered tutoring systems broaden access to professional development and lifelong learning.

Learning analytics and Big Data applications represent a particularly significant advancement. By collecting and analyzing interaction data from LMS platforms, institutions can monitor academic performance, identify at-risk students, and implement personalized interventions. Automated grading systems, attendance tracking, and feedback tools reduce administrative burden while increasing instructional precision.

Pedagogical opportunities of the digital educational environment. The Digital Educational Environment offers several pedagogical advantages:

Accessibility and Inclusivity. Digital platforms eliminate spatial and temporal barriers, enabling remote, working, and differently-abled learners to participate in academic activities. Hybrid and blended learning models expand opportunities for continuous education.

Personalization and Adaptive Learning. Artificial intelligence and adaptive systems allow content to be adjusted according to learners' performance levels and cognitive needs. Intelligent tutoring systems support mastery learning and structured skill development, particularly in academic reading and argumentative writing.

Collaborative and Interactive Learning. Digital discussion forums, shared documents, and peer-assessment tools foster cooperative knowledge construction. In the Reading and Writing Practice curriculum, collaborative drafting and structured peer review strengthen critical thinking and academic discourse.

Development of 21st-Century Skills. Digital learning environments cultivate problem-solving, creativity, digital literacy, information evaluation, and analytical reasoning—competencies essential for professional success in a knowledge-based economy.

MODERN TECHNOLOGICAL TRENDS

Contemporary digital education increasingly incorporates:
- ✓ Artificial Intelligence (automated grading, predictive analytics, chatbots);
- ✓ Learning Analytics and Big Data for evidence-based decision-making;
- ✓ Hybrid and blended learning models;
- ✓ Immersive technologies (AR/VR) for experiential learning;
- ✓ Microlearning and mobile-based instruction;

✓ Gamification strategies to enhance engagement and intrinsic motivation.

These trends reflect a shift toward competency-based, student-centered education.

CHALLENGES OF DIGITAL TECHNOLOGIES IN EDUCATION

Despite their advantages, digital technologies present significant implementation challenges.

First, unequal access to devices and reliable internet connectivity remains a major concern, particularly for students from rural or low-income backgrounds. Without adequate infrastructure, digital education may widen existing educational inequalities.

Second, excessive screen time and physical health concerns (e.g., vision strain, posture problems) require balanced pedagogical planning. Additionally, not all students thrive in online environments; some require face-to-face interaction and additional support mechanisms.

Third, teachers' digital competence and motivation play a critical role. Effective digital transformation demands continuous professional development, institutional support, and incentive structures. Instructors must learn to integrate technology meaningfully rather than use it superficially.

Fourth, assessment integrity and academic honesty pose new challenges. However, alternative evaluation strategies such as open-book exams, problem-based tasks, and analytical writing assignments can shift emphasis from memorization to higher-order thinking.

Fifth, while high-tech solutions are attractive, low-tech interventions may sometimes be more practical and cost-effective, especially in resource-constrained settings. Therefore, digital strategies must be context-sensitive and sustainable.

In Uzbekistan's higher education system, digital transformation has become a strategic priority. Institutions are expanding online learning platforms, improving ICT infrastructure, and incorporating hybrid instruction models.

At Namangan State Institute of Foreign Languages, the Digital Educational Environment supports the modernization of language instruction. Within the Reading and Writing Practice curriculum, digital tools enhance:

✓ Academic literacy development;
✓ Structured argumentation skills;
✓ Independent research competencies;
✓ Continuous formative assessment;
✓ Data-driven instructional adjustments.

However, successful implementation requires investment in infrastructure, teacher training, equitable access policies, and cybersecurity measures.

The integration of digital technologies within the Digital Educational Environment represents a systemic transformation rather than a temporary adaptation. While digital tools provide unprecedented opportunities for accessibility, personalization, collaboration, and innovation, their effectiveness depends on strategic planning, professional competence, and equitable resource distribution.

In the context of foreign language education at Namangan State Institute of Foreign Languages, digital technologies serve as a catalyst for enhancing academic reading and writing competencies, aligning national educational reforms with global digital modernization trends.

Discussion and Future Directions

The findings of this study confirm that the Digital Educational Environment (DEE) represents not merely a technological enhancement of traditional education but a structural and pedagogical transformation. The shift from conventional classroom instruction to digitally integrated learning ecosystems reflects a broader transition toward Education 4.0, characterized by hybrid models, data-driven decision-making, and competency-based learning.

Effective implementation of the Digital Educational Environment depends on several interrelated factors. First, a coherent institutional digital strategy is essential to ensure alignment between infrastructure, curriculum, and pedagogical goals. Second, teacher digital competence plays a decisive role; instructors must be able to integrate technology meaningfully rather than use it superficially. Third, curriculum redesign is necessary to incorporate interactive tasks, digital assessment formats, collaborative writing, and research-based assignments. Fourth, data governance policies must regulate privacy, cybersecurity, and ethical use of learning analytics.

At the same time, digital technologies significantly enrich the educational experience. Through video conferencing platforms, institutions can invite international experts into virtual classrooms, expanding academic exposure beyond geographical limitations. Online polls, student response systems, and digital feedback tools allow instructors to engage even the most reserved students, creating inclusive participation environments. Regular digital check-ins help educators identify learning difficulties and adapt instruction accordingly.

Within the Reading and Writing Practice program at Namangan State Institute of Foreign Languages, these tools enhance academic discourse and collaborative writing processes. Students can co-construct texts in shared digital spaces, receive real-time feedback, and participate in structured peer review. Self-paced learning options enable learners to revisit recorded lectures, pause instructional materials, and refine drafts independently. Faster learners can extend their research tasks, while those requiring additional time can proceed without pressure, thereby promoting differentiated instruction.

Digital quizzes, gamified tasks, and interactive modules contribute to active learning strategies. Furthermore, collaborative technologies allow students to communicate and exchange ideas regardless of physical constraints, strengthening both academic and social interaction. In this sense, digital platforms do not replace communication; rather, they reconfigure it within virtual and hybrid spaces.

However, several challenges remain. The digital divide continues to affect students from low-income or rural backgrounds who lack adequate devices or stable

internet access. Cybersecurity risks and data protection concerns require robust institutional safeguards. Over-reliance on automation may reduce critical pedagogical judgment, while prolonged screen exposure may affect students' physical and psychological well-being. Additionally, some learners struggle in online environments due to limited support systems or lack of digital literacy.

Professional development programs are therefore essential. Teachers require continuous training in digital pedagogy, assessment design, and technology-enhanced instruction. Motivation and institutional incentives also influence successful adoption. Importantly, while high-tech solutions are promising, low-tech or blended approaches may sometimes provide more sustainable and context-sensitive outcomes.

Looking ahead, the future of digital education is closely connected to expanding internet capacity, mobile learning ecosystems, artificial intelligence integration, and multilingual accessibility of online resources. Educational technology companies are increasingly offering scalable digital solutions, potentially improving infrastructure quality and broadening access. Nevertheless, technological progress must remain balanced with the human dimension of education. There is no complete substitute for meaningful teacher–student interaction.

Consequently, the emerging model of hybrid education—integrating both online and face-to-face instruction—appears to be the most sustainable direction. In the Uzbek higher education context, particularly at Namangan State Institute of Foreign Languages, such integration strengthens academic literacy, communicative competence, and research skills in foreign language education.

Conclusion

The Digital Educational Environment (DEE) represents a comprehensive and systemic educational ecosystem that integrates technological infrastructure, pedagogical innovation, and data-driven management. It transcends the traditional understanding of technology as a supplementary classroom tool and instead embodies a structural transformation of teaching and learning processes. Through the coordinated use of digital platforms, learning management systems, analytics tools, and interactive content, education becomes more flexible, personalized, collaborative, and competency-oriented.

The implementation of digital technologies in higher education—particularly in foreign language programs such as the "Reading and Writing Practice" course at Namangan State Institute of Foreign Languages—demonstrates how digital environments enhance academic literacy, structured argumentation, formative assessment, and independent learning. Technology enables students to access diverse digital resources, monitor their academic progress, receive immediate feedback, and engage in collaborative knowledge construction. At the same time, automated systems assist instructors by reducing repetitive administrative tasks such as attendance tracking, grading, and performance monitoring, thereby allowing greater focus on pedagogical creativity and mentorship.

Beyond operational efficiency, digital education fosters responsible and strategic use of technology. Students develop digital citizenship, self-discipline, and decision-making skills, preparing them for lifelong learning in a rapidly evolving knowledge economy. Adaptive learning tools and customizable digital content further support individualized learning pathways, enabling learners to progress according to their cognitive pace and academic needs.

Emerging global trends—including artificial intelligence, immersive technologies (AR/VR), learning analytics, microlearning, gamification, and hybrid instructional models—are shaping the future trajectory of education systems worldwide. These technologies not only enhance instructional effectiveness but also contribute to broader sustainable development objectives by promoting efficient resource use, informed data management, and innovation-driven growth. In this sense, digital transformation in education aligns with long-term social, economic, and environmental sustainability goals.

However, sustainable implementation of the Digital Educational Environment requires a balanced integration of technology and pedagogy. Strategic digital policies, investment in infrastructure, teacher professional development, digital equity initiatives, and continuous research-based evaluation are essential to ensure inclusive and effective outcomes. Technological advancement must remain human-centered, preserving meaningful teacher–student interaction and supporting social-emotional development.

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" ONOMASIOLOGICAL STUDY OF THE CATEGORY OF INTENSITY IN WORLD LINGUISTICS."

Abstract:
This article examines the onomasiological study of the category of intensity and addresses issues related to the investigation of linguistic units in semasiological and onomasiological research. The ontological description of the category of intensity is also discussed.

Key words: onomasiological category, denotatum, semasiological research, gradation.

Introduction

A number of researchers consider the category of intensity to be an onomasiological category (I. Turanskiy, V. Shilovskaya). Indeed, it is appropriate to study the units of the intensification category from both onomasiological and semasiological perspectives.

When examined from the point of view of possessing the seme of intensity, the analysis proceeds from abstraction (a language unit) to a concrete unit. For example, if we take the intensifier "juda" ("very") from this perspective, it is first identified in the dictionary as an invariant in its status as a language unit. Then attention is paid to the concretization, variation, and specification of this general (invariant) meaning. The manifestation and distribution of the meaning of "juda" in different contexts are determined. On this basis, information is obtained about the speech reality associated with "juda" (the phenomenon of exceeding the norm).

The onomasiological study of intensity is oriented in a direction opposite to semasiological analysis. In this case, primary attention is focused on the reality or object associated with the intensifying word (or affix).

For example, in order to study the meaning of the intensifier in the phraseological unit "tarvuzi qoʻltigʻidan tushmoq" (literally, "his watermelon fell from under his arm"), attention is first directed to the reality associated with this phrase (the phenomenon being named). This refers to a specific situation in which a person's watermelon falls from under his arm and, as a result, a particular psychological state arises.

After that, attention is paid to the abstraction of the literal combination "the watermelon falling from under the arm" and to its specialization as an intensifying device expressing a state of emotional collapse, disappointment, or embarrassment.

In general, semasiological research proceeds along the path: **language unit semantics → concept → image → object**, whereas onomasiological study is carried out in the direction of **object (denotatum/referent) → image → concept (significatum) → lexical meaning → grammatical meaning**. In fact, it is more effective to study units with abstract meanings from a semasiological perspective.

From this perspective, analysis proceeds step by step from an existing abstract state to concreteness (particular instances). For example, it is difficult to identify the real object (denotatum or referent) expressed by the intensifier **-roq**, which denotes a lesser degree (weakness) in comparison with the norm.

Therefore, in order to determine the meaning (function) of **-roq** more accurately in relation to reality, its origin is identified: **-roq ← (yi)roq → yiroq** ("far"). After that, the present intensifying meaning of **-roq** (abstract attenuation or lower degree) is examined in connection with the abstract and concrete meanings of the word *yiroq*. In other words, it is understood that *yiroq* developed from a concrete meaning to lexical abstraction, and subsequently to grammatical abstraction. This, in turn, allows us to gain a clearer and deeper understanding of the meaning of **-roq** as expressing insufficiency in relation to the norm or a modified (comparatively altered) degree of intensity.

Onomasiological research requires engagement with the concepts of ontology (philosophy), psychology, and logic; in fact, it enriches and complements semasiological analysis. Now let us turn to the ontological description of the category of intensity.

Literature Review

Some linguists recognize the category of intensity as a fundamental category and as a general gnoseological (epistemological) category. The linguist O. Bozorov points out that the phenomenon of intensity has the status of a linguistic law. According to him, "Intensification or gradation is the reflection in consciousness (thinking) of the gradual quantitative changes inherent in natural, physical characteristics, their progressive development, and the gradual acquisition of a new quality, which eventually becomes a law of language."[2] The linguistic law of intensification or gradation, as a certain abstract construct, reflects the quantitative changes characteristic of an object or phenomenon in both the objective and subjective realms. Within the scope of a single entity, these quantitative changes give rise to different states of that entity and its transition into another quality (or even another object).

To understand the law of the transition of quantitative changes into qualitative changes (intensification, gradation), it is necessary to correctly grasp the interrelation of philosophical objects, signs, properties, norms, and phenomena of quantitative change. Philosophically, as noted in the law, quantity and quality are among the categories of philosophy that reflect essential aspects of the material world.

Things and phenomena in the world are constantly changing and developing; in these processes, things

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[2] Бозоров О. Ўзбек тилида даражаланиш: Филол. фанл. д-ри. дисс. ... автореф. – Тошкент: 1997. – Б. 24.

continuously emerge and transform. However, this does not lead to the conclusion that they lack a definite form of existence, are absolutely unstable, or cannot be distinguished from one another. No matter how much a thing changes, for a certain period it remains in a particular state, retaining its identity as a specific object in terms of quality. The qualitative specificity of things and phenomena stabilizes them, defines their boundaries, and gives rise to the immense diversity of the world. Quality is the essential definiteness of a thing. It is connected with the whole of the object, fully encompassing it and cannot be separated from it. For this reason, the concept of quality is linked to the existence of a thing. In a thing's relations with other things, its various properties are manifested; in this sense, one can reflect on the multiple qualities of objects and phenomena. All objects, along with having a definite quality, also possess a definite quantity (a certain size, number, volume, rate of occurrence of processes, level of development of properties, etc.).

Analysis and Results

Quantity is the aspect of a thing that allows it to be divided, either actually or conceptually, into discrete parts and then recombined into a whole. The unity (similarity, sameness) of parts or objects is what defines the distinctions in quantity. Differences between dissimilar objects pertain to quality, while differences between similar objects pertain to quantity. [3]

Quality is the set of properties, characteristics, and attributes that ensure the definiteness of things and phenomena, giving them stability. Quality reflects the generality, integrity, relative stability, and the similarity or dissimilarity of a thing. In a broad sense, quality is the sum of the various properties of things and phenomena. However, quality and a property do not mean exactly the same thing.

Quantity is the aspect of things and phenomena characterized by their size, volume, dimensions, weight, speed of motion, and the like. The unity and interrelation of quantity and quality are expressed in the concept of a measure (norm). A measure refers to the quantitative unit required for a change in quality to occur. Unlike quality, quantity is not as tightly bound to the existence of the object; changes in quantity do not immediately lead to the disappearance or fundamental transformation of the object. Only when the quantity reaches a certain limit for a given object do quantitative changes produce qualitative changes.

In this sense, the definiteness of quantity differs from that of quality and is characterized by a thing's external relation to other objects. No object possesses only quality or only quantity. Each object consists of a unity of specific quality and quantity (a measure); it is a certain quality in terms of magnitude (quantity) and a certain quantity in terms of quality. The disruption of the measure leads to a change in the object or phenomenon, causing it to transform into another object or phenomenon.[4]

The law of the transition of quantitative changes into qualitative changes is one of the fundamental laws of philosophy and operates in the development of nature, society, and thought. The essence of this law is that insignificant quantitative changes in things and phenomena gradually accumulate, and at a certain stage of development, the measure is disrupted, leading, by a leap, to fundamental qualitative changes.

Changes in quality inevitably lead to changes in properties. However, changes in properties do not always affect the quality. Quality reflects the permanence and relative stability of an object. Things and phenomena differ not only in their qualitative definiteness but also in their quantitative aspects. Quantitative changes ultimately lead to qualitative changes, but for this, a certain measure of quantitative change is required to bring about a transition to a new quality. For all things and phenomena in existence, changes in quantity and quality are characteristic. Changes in quantity and quality are interrelated and mutually conditional. Quantitative changes are also changes in things and phenomena. However, if changes in quantity and quality involved the complete transformation of things and phenomena, quantitative changes, within certain limits, preserve the integrity of objects and phenomena and do not alter their existing state. When a certain stage is reached, quantitative changes exceed the measure and consequently transform into new qualitative changes.

For example, if water is heated to 100°C, it turns into steam. The transition from one qualitative state to another is a general law of the development of nature, society, and human thought. The transition from quantitative changes to qualitative changes also occurs in all areas of social life. As a result of this law, human society progresses from one period to another toward a more developed and advanced stage. A new quality that arises from quantitative changes does not remain fixed; it becomes the basis for further changes in quality and quantity according to new regularities. The transition from quantitative changes to qualitative changes occurs through a leap. A leap is a form of accelerated discontinuity in development. During this discontinuity, the old quality undergoes a fundamental transformation, and a new quality emerges. The newly arisen quality, in turn, generates new quantitative changes.

New quantitative changes continue to develop and, in turn, lead to new qualitative changes. Continuity and discontinuity are interconnected in this way, ensuring the infinite progression of the development process. The transition from the old quality to the new quality can also occur through a leap.

The change of quality through such a leap is characteristic of many phenomena in nature and society. The difference between a transition occurring by a leap and one occurring without a leap is that, in the former, the nature and quality of things and phenomena change rapidly. (For example, the fission of uranium.) However, the transition from an old quality to a new quality through a leap is not the only way this change can occur.

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[3] Falsafa qomusiy lug'ati. – Toshkent: "Sharq" nashriyoti, 2004. – B. 275.

[4] Falsafa qomusiy lug'ati. Ko'rs.asar – B. 276.

In one of his articles, O. Bozorov attempts to demonstrate that the law of intensification, or gradation, holds the status of a law and tries to prove it based on the characteristics that define a law.[5]

Conclusion

Intensification, as a linguistic law, encompasses the units of all levels of language. It explains how these units acquire different forms and transform into other units. In short, intensification (gradation) is a language phenomenon whose meaning and content are diverse and connected with phonetic, morphological, lexical-phraseological, syntactic, and textual phenomena. This law explains how language units and the system are structured and is therefore of fundamental importance.

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4. Falsafa qomusiy lug'ati. – Toshkent: "Sharq" nashriyoti, 2004. – B.277 .

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[5] Falsafa qomusiy lug'ati. – Toshkent: "Sharq" nashriyoti, 2004. – B.277 .

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ВОЗРАСТНЫЕ И ПСИХОЛОГИЧЕСКИЕ ОСОБЕННОСТИ НАВЫКОВ АУДИРОВАНИЯ У УЧАЩИХСЯ 7–8 КЛАССОВ: СИСТЕМАТИЧЕСКИЙ ОБЗОР ЛИТЕРАТУРЫ

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AGE-RELATED AND PSYCHOLOGICAL CHARACTERISTICS OF LISTENING COMPREHENSION SKILLS IN GRADES 7–8 LEARNERS: A SYSTEMATIC LITERATURE REVIEW

Аннотация

Статья посвящена теоретическому анализу возрастных и психологических особенностей учащихся 7–8 классов, влияющих на развитие навыков аудирования на английском языке. На основе систематиче-ского обзора 25 источников установлено, что формальное мышление, рабочая память и развитие пре-фронтальной коры создают оптимальное педагогическое окно для обучения метакогнитивным страте-гиям. Языковая тревожность, мотивация и влияние сверстников выступают ключевыми детерминан-тами эффективности аудирования в условиях цифровой образовательной среды.

Ключевые слова: аудирование, подростковый возраст, когнитивное развитие, метакогнитивные стратегии, языковая тревожность, мотивация, 7–8 классы, рабочая память, цифровая среда.

Abstract

This study examines the age-related and psychological characteristics of grades 7–8 learners (aged 13–14) that shape the development of English listening comprehension skills. A systematic review of 25 sources identifies formal operational thinking, working memory capacity, and prefrontal cortex maturation as factors creating an optimal window for metacognitive strategy instruction. Foreign language anxiety, motivation, and peer influence are found to be the primary psychological determinants of listening effectiveness in digital learning environments

Ключевые слова: аудирование, подростковый возраст, когнитивное развитие, метакогнитивные стратегии, языковая тревожность, мотивация, 7–8 классы, рабочая память, цифровая среда.

Key words: listening comprehension, adolescent learners, cognitive development, metacognitive strategies, foreign language anxiety, motivation, grades 7–8, working memory, digital learning environment.

Introduction

There is a small irony embedded in the way listening gets treated in most EFL classrooms. It is the skill students will use most accounting for 40–50% of all classroom communication [1, p. 12] and yet it is the skill that receives the least deliberate methodological attention. Teachers assign readings, give writing tasks, run speaking activities. Listening, more often than not, gets a recording played at the end of class, followed by comprehension questions. That is not instruction; it is testing.

The gap matters more at grades 7–8 than at almost any other stage. Adolescents aged 13–14 are in the middle of a cognitive and psychological transformation that creates both remarkable opportunities and significant vulnerabilities for language learning. Their reasoning is becoming more abstract, their working memory more expansive, their brains more neurologically prepared for strategic thinking. At the same time, they are more anxious, more sensitive to peer judgment, and more easily overwhelmed by tasks that expose what they do not know. Getting listening instruction right at this stage is not a minor pedagogical detail it can determine whether a student develops genuine listening competence or simply learns to survive comprehension checks.

The research literature has not been idle on either front. Substantial work exists on how adolescents develop cognitively [4, p. 52; 5, p. 78] and on how listening comprehension functions as a psycholinguistic process [2, p. 5; 3, p. 24]. What has been less thoroughly attempted is the integration of these two bodies of knowledge particularly for learners in the Uzbek educational context, where grades 7–8 represent one of the largest and most consequential cohorts in the secondary system.

This article sets out to build that bridge. It is structured around three research questions. RQ1 asks which cognitive characteristics of grades 7–8 learners most directly affect listening comprehension. RQ2 asks how the psychological features of early adolescence shape listening effectiveness. RQ3 asks why the developmental moment of grades 7–8 represents an optimal window for teaching metacognitive strategies. Together, these questions form the basis for a theoretically grounded framework for listening instruction at this level.

Methods

Research design

This study employs a systematic literature review (SLR). The choice of methodology reflects the nature of the research questions: since all three are theoretical

and developmental rather than empirical, an SLR is more appropriate than a primary data study. As Kitchenham and Charters [6, p. 3] note, SLR provides a replicable, transparent procedure for synthesizing existing scholarship a quality that a narrative review, however thorough, cannot guarantee.

Search strategy

Sources were retrieved from four databases: Scopus, Web of Science, ERIC, and Google Scholar. Searches were structured as Boolean strings organized around three conceptual clusters: (1) listening comprehension "listening comprehension", "EFL listening", "second language listening"; (2) adolescent development "adolescent learners", "cognitive development", "working memory", "foreign language anxiety"; (3) metacognition "metacognitive strategies", "self-regulated learning", "MALQ". Sources specific to the Uzbek educational context were gathered separately through national journal repositories and Ministry of Education archives.

Included: peer-reviewed articles and monographs published between 1972 and 2023; sources directly addressing listening comprehension, adolescent cognitive or psychological development, or metacognition in language learning; publications available in English, Russian, or Uzbek.

The source selection process followed the PRISMA protocol [7, p. e1000097] across four stages, documented in Table 1. PRISMA was chosen because it makes the filtering logic transparent and auditable — a reader can see not just which sources were included, but why others were not.

The 25 retained sources were organized into four thematic clusters: cognitive development and working memory (8 sources); psychological factors — anxiety and motivation (7 sources); metacognitive strategies and listening (7 sources); phonetic processing and the Uzbek context (3 sources).

Analysis method

Thematic synthesis [8, p. 45] was used to analyze the selected sources. Each text was coded for its key theoretical claims and empirical findings; codes were grouped into recurring patterns; and patterns were integrated into cross-cutting conclusions. This approach suits theoretical articles well because it can accommodate qualitative and quantitative sources alongside one another, drawing out conceptual threads rather than aggregating statistics

Results

RQ1: Cognitive characteristics affecting listening comprehension

Four cognitive factors emerge from the literature as directly relevant to how grades 7–8 learners handle spoken English.

Formal operational thinking. Kuhn's review of cognitive developmental research confirms that abstract reasoning, hypothesis formation, and logical inference are actively consolidating from around age 11–12 [9, p. 50]. For grades 7–8 learners, this means they are increasingly able to engage with inferential listening, drawing on context, making probabilistic guesses about meaning, and working with implied rather than explicitly stated content. This matters pedagogically because it opens the door to a qualitatively different kind of listening task. Younger learners are largely limited to literal comprehension; grades 7–8 students can begin, with guidance, to do something more sophisticated [2, p. 47].

Working memory. By early adolescence, working memory capacity reaches approximately 5–7 units — enough to hold phonological input, retrieve lexical items, and begin constructing propositional meaning in parallel [10, p. 831]. This makes moderately complex listening tasks manageable. The trouble is that this capacity is easily destabilized. A speaker with an unfamiliar accent, a stretch of dense vocabulary, or a speech rate above the learner's comfort zone can exhaust working memory resources within a few seconds. Paas and Sweller [11, p. 31] describe this as cognitive overload: extraneous load caused by poorly designed tasks or excessive material difficulty competes directly with the germane load needed for actual learning. When that threshold is crossed, comprehension does not merely slow — it collapses.

Sustained attention. Research on how the adolescent brain manages attention suggests a functional limit of around 15–20 minutes of sustained concentration [12, p. 67]. For listening specifically, Field's experimental findings are worth citing directly: continuous audio lasting more than 10 minutes produces a measurable, significant decline in comprehension quality [3, p. 24]. The pedagogical implication is uncomfortable for anyone attached to extended listening exercises — long recordings are not just less engaging, they are actively working against the cognitive architecture of the learners they are meant to develop.

Phonetic decoding. The phonological gap between Uzbek and English adds a layer of difficulty that is easy to underestimate. Best and Tyler [13, p. 18] show that listeners whose L1 lacks certain phonemic distinctions must allocate additional perceptual resources to discriminate those sounds in a second language. English phonemes such as $/\theta/$, $/\eth/$, $/æ/$, and $/\Lambda/$ have no direct equivalents in Uzbek, meaning that every listening task carries a higher bottom-up processing cost for Uzbek learners than for speakers of phonologically closer L1s a structural disadvantage that explicit phonetic instruction can meaningfully reduce.

RQ2: Psychological characteristics shaping listening effectiveness

Three psychological factors are identified in the literature as particularly consequential during early adolescence.

Foreign language anxiety. The scale of the problem is worth stating clearly: Dewaele and MacIntyre found that foreign language anxiety during listening tasks affects the majority of EFL learners, with intensity varying by context and task design [14, p. 245]. Arnold's framing of the "misunderstanding spiral" [15, p. 89] explains the mechanism. When a learner fails to catch something, anxiety rises; rising anxiety draws on working memory; depleted working memory means the next stretch of audio is even harder to follow; which increases anxiety further. For adolescents who are al-

ready acutely sensitive to social evaluation and the visible exposure of gaps in their knowledge, this spiral can become very hard to interrupt once it has started.

Motivation. Ryan and Deci's self-determination theory [16, p. 70] distinguishes between intrinsic motivation, rooted in genuine interest and enjoyment, and extrinsic motivation, driven by grades or external pressure. Grades 7–8 learners typically carry both in shifting proportions. The literature is fairly consistent on one point: when listening materials connect with things learners actually care about music, sport, science, current events, delivered through podcasts, TED-Ed, or YouTube rather than textbook recordings intrinsic motivation is activated, engagement increases, and comprehension improves not just in the moment but over time. The reverse is also true: generic, interest-neutral materials reliably produce motivational disengagement.

Peer influence. Adolescence is, among other things, the period of life when peer relationships carry the most weight [5, p. 78]. Lantolf and Thorne's sociocultural framework [17, p. 197] points to the pedagogical implication: collaborative tasks in which peers work alongside or slightly ahead of one another can scaffold understanding more effectively than solo work. For listening specifically, pair and group verification tasks comparing what each person heard, reconciling discrepancies, building a shared account of the audio leverage the social dynamics that adolescents are already navigating, rather than fighting against them.

RQ3: Grades 7–8 as the optimal window for metacognitive strategy instruction

The convergence of neurological and developmental evidence on this point is more striking than the field sometimes acknowledges.

Blakemore and Choudhury's neuroimaging research showed that the prefrontal cortex the brain region governing planning, self-monitoring, and strategic regulation undergoes its most intensive post-infancy development between the ages of 12 and 16 [18, p. 301]. This is not a peripheral finding. It means that the neural architecture underpinning metacognitive control is being actively constructed during the precise period when grades 7–8 students are sitting in classrooms. Veenman, Van Hout-Wolters, and Afflerbach define metacognition as encompassing both metacognitive knowledge and metacognitive skillfulness the ability to plan, monitor, and evaluate one's own cognitive processes [19, p. 5]. These are capacities that grades 7–8 learners are, in a neurobiological sense, primed to develop.

Zimmerman's self-regulated learning cycle [20, p. 16] translates this readiness into a practical framework: forethought before a task, monitoring and adjustment during it, and reflective evaluation afterwards. Applied to listening, Vandergrift's metacognitive pedagogical sequence [2, p. 47] operationalizes the same cycle through pre-listening prediction, focused listening with monitoring prompts, collaborative verification, and post-listening reflection. Cross-cultural validation of the MALQ instrument has confirmed that this approach transfers to Asian and Central Asian contexts [21, p. 435; 22, p. 85]. The caveat that the evidence insists on is this: biological readiness is necessary, but it is not sufficient. Without explicit instruction, the metacognitive potential of grades 7–8 tends to go unrealized not because the capacity is absent, but because no one has shown learners how to use it [2, p. 47].

Summary of findings

Table 1 maps the findings across all three research questions, linking each developmental factor to its effect on listening comprehension and the corresponding instructional response:

Table 1

Developmental characteristics of grades 7–8 learners and their implications for listening instruction

Factor	Grade 7–8 profile	Effect on listening	Methodological implication
Formal operational thinking	Actively consolidating (Kuhn, 2008)	Inferential comprehension becomes achievable	Include inference tasks; move beyond literal comprehension questions
Working memory	5–7 units (Baddeley, 2003)	Moderate complexity handled; collapses under high load	Gradual difficulty progression; avoid dense lexical input
Sustained attention	15–20 min (Sousa, 2011)	Comprehension declines sharply beyond 10 min of continuous audio	Audio clips ≤5 min; structured pause points
Metacognitive readiness	Rapid prefrontal development (Blakemore, 2006)	Ready to learn strategies — but needs explicit instruction	Teach planning, monitoring, and evaluation as deliberate skills
Foreign language anxiety	Elevated in 50–60% of learners (Dewaele & MacIntyre, 2014)	Triggers misunderstanding spiral; depletes working memory	Low-stakes tasks; non-judgmental classroom atmosphere

Factor	Grade 7–8 profile	Effect on listening	Methodological implication
Motivation	Mixed intrinsic/extrinsic (Ryan & Deci, 2000)	Authentic, interest-relevant materials boost engagement and retention	Use podcasts, TED-Ed, YouTube aligned with student interests
Peer influence	At developmental peak (Steinberg, 2014)	Collaborative listening consistently outperforms solo work	Pair and group tasks; peer verification of comprehension

Source: compiled by the author based on Keating [4, p. 52], Baddeley [10, p. 831], Dewaele & MacIntyre [14, p. 245], Vandergrift [2, p. 47], Steinberg [5, p. 78].

Discussion

What the literature describes is a developmental stage that is, in equal measure, more capable and more fragile than it appears from the outside. Grades 7–8 learners can handle inferential listening, manage moderately complex audio, and if taught well become genuinely strategic in how they approach spoken texts. These are real capacities. But the same learners are also operating with working memory that overloads faster than they realize, attention that sets a hard ceiling on how long useful listening can continue, and emotional states that can shut down comprehension entirely if the classroom atmosphere is wrong.

The relationship between anxiety and cognitive load is worth dwelling on. These are not independent variables that add up — they amplify each other. Difficult material raises extraneous cognitive load; higher load reduces comprehension; reduced comprehension produces anxiety; anxiety occupies working memory that was already under pressure. Arnold's spiral [15, p. 89] and Paas and Sweller's model [11, p. 31] are describing the same vicious cycle from different theoretical directions. The instructional implication is that material difficulty and emotional climate cannot be managed separately. A teacher who calibrates the cognitive challenge perfectly but creates a high-stakes, error-intolerant environment will still lose learners to the spiral.

The Uzbek context makes these findings particularly relevant. The national curriculum [23, p. 14] names listening comprehension as a core competency at grades 7–8, which is the right instinct. The problem is that the curriculum specifies what students should be able to do without providing much guidance on how that ability is supposed to develop. Rakhimova's research found that the majority of English teachers in Tashkent-region schools had received no training in metacognitive strategy instruction — not inadequate training, but none [24, p. 83]. Meanwhile, the Digital Uzbekistan 2030 program is expanding the availability of digital tools in schools [25]. Tools are useful. But digital tools deployed without a pedagogical framework tend to produce, at best, a more technologically sophisticated version of the same approach that was not working before.

Three limitations of this study are worth stating plainly. First, it is theoretical; it contains no original empirical data. Second, the search strategy may have missed relevant sources published in smaller regional journals not indexed in international databases. Third, the framework proposed here has not been empirically tested in Uzbek schools. The logical next step is a classroom study ideally with a control group, using the MALQ as a pre- and post-measure that would either validate the framework or reveal where it needs adjustment.

Conclusion

This article has drawn on three bodies of research developmental psychology, cognitive neuroscience, and applied linguistics to build a theoretically grounded account of what listening instruction should look like for grades 7–8 learners. The three research questions have produced answers that point in a consistent direction.

On RQ1: Formal operational thinking, a working memory capacity of 5–7 units, a sustained attention window of 15–20 minutes, and phonological challenges specific to Uzbek-English transfer all bear directly on how grades 7–8 students process spoken input. These are not problems to be worked around they are design parameters for effective listening materials and tasks.

On RQ2: Foreign language anxiety (documented across EFL learner populations by Dewaele and MacIntyre [14, p. 245]), the mixed intrinsic-extrinsic motivational profile of early adolescence, and heightened peer influence are not background conditions for listening instruction they are active forces shaping whether comprehension happens at all. A methodology that ignores them is not incomplete; it is working against itself.

On RQ3: The neurobiological development of the prefrontal cortex during ages 12–16 makes grades 7–8 the most favorable period in a student's school career for teaching metacognitive strategies as deliberate, transferable skills. The window is real. Whether it gets used depends entirely on whether teachers are equipped and supported to use it.

The practical implications follow directly. Listening instruction at this level should use shorter audio segments (under 10 minutes, ideally under five), build in explicit pre-, during-, and post-listening routines, include collaborative tasks that align with adolescent social dynamics, and maintain a classroom climate where not understanding is a starting point rather than an endpoint. Digital platforms can support all of these principles but only if the pedagogical intention is clear before the technology is selected, not after.

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IMPLEMENTATION OF INTERACTIVE LEARNING TECHNOLOGIES IN TEACHING ORGANIC CHEMISTRY IN EDUCATIONAL ENVIRONMENT

Abstract.
The work presents applications that can be used in the preparation of educational material for students of higher medical institutions of education, which will help students remember the material, quickly find information, as well as reduce the level of stress and increase focus on studying in the discipline of organic chemistry.

Keywords: Internet applications, educational process, academic and professional success, Anki, Quizlet, Calm, Forest, Evernote, Anatomy&Physiology, Netter'sAnatomyFlashCards, VisibleBody, MedNotes, MedicalDictionarybyFarlex, Lecturio, Medscape, GeekyMedics, Prezi, GoogleSlides, Canva, Keynote, Fishbone.

Relevance of the Problem.

When studying organic chemistry, students have to face a huge amount of new information and educational tasks that require a lot of attention and perseverance. In such an environment, knowledge of innovative tools and technologies can become an important aid to facilitate preparation for the discipline and, in general, the educational process, as well as increase the effectiveness of studying the material.

1. Students should pay attention to applications that will help them manage their time to study the material more effectively, prevent stress and discipline themselves [1]:

Anki - is a flashcard-based learning program. It helps students remember new terms and concepts needed for studying medical subjects. This program allows you to create your own decks of cards or download ready-made decks from the Internet.
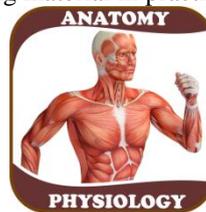
Quizlet - is a resource with a similar principle that works based on the use of flash cards. Many are already familiar with it, because it has a database of more than 200 million cards, which makes it easier for students to find a suitable set.

Calm - is an application for meditation and relaxation. Obviously, for medical students who are constantly learning new materials and facing stress, this application can be a useful tool to reduce anxiety and constant worries.

Forest - is an app that helps students focus and stay focused on their studies. It works on the principle of a game where users can grow virtual trees that do not grow if they are distracted.

2. From applications that will help a student to concentrate, organize information and learn it in the shortest possible time, it is worth switching to programs that allow you to save and use the existing material in practice [2].

Evernote: allows you to store, organize and synchronize different types of notes. You can download textbooks in PDF format or scan textbook pages and save them to your Evernote account for easy access.

Anatomy&Physiology: contains a complete anatomy and physiology textbook that can be used offline. The app contains illustrations, videos and interactive quizzes to help you better understand the material.

Netter'sAnatomyFlashCards: contains a collection of anatomy flashcards that can be used to review and study the material. The cards contain detailed illustrations and descriptions of anatomical structures.

Visible-Body: offers 3D models allows you to view different body systems. You can manipulate models, make cuts, and explore the details of structures. This application can be used both for studying anatomy, histology and physiology, biochemistry, etc., because it allows you to see and visualize processes that take place even at the cellular level.

MedNotes: helps medical students organize and store their notes and materials. It provides the ability to create digital notes, store information about lectures, textbooks, additional literature and other resources.

MedicalDictionarybyFarlex: provides access to a medical dictionary of over 180,000 terms and definitions. The application can be useful for medical students who are looking for definitions of terms found in textbooks and lectures.

Lecturio: It is an educational resource that provides video lectures, study materials and tests on various medical subjects. It also allows you to find both new material and save the existing one.

Medscape: provides medical university students with a range of useful material. Allows users to receive up-to-date and reliable information on medical topics, including diagnosis, treatment, prognosis and prevention of various diseases. The application also includes functions that allow you to conduct medical calculations, view interactions between drugs, and much more that can be useful in medical practice.

GeekyMedics: designed to teach various practical skills such as communication with patients, diagnosis, prescribing and treatment. The platform provides video lessons, interactive exercises, clinical scenarios, articles, tips and other useful materials to improve medical practice skills.

3. It is also necessary to note the programs that can be a useful tool in the implementation and presentation of the studied material, or the performance of individual tasks, independent works, preparation of additional information by creating, for example, a presentation [3].

Prezi - is an online tool for creating presentations that allows you to create them out of the box and creative. It has many features such as animation, 3D elements and multi-university.

GoogleSlides - is a free browser-based presentation software. It has many features such as design templates, adding images and other media elements, animations and sharing with other users.

Canva - is a tool that can be used to create presentations, posters, flyers and other graphic elements. Allows to reveal creative potential during preparation, and is also very convenient to use.

Keynote- is a presentation software that is part of the AppleiWork software suite. Has no fewer functions than analogues. Provides an opportunity to create works using ready-made templates or create your own, add animations, visualize text and much more.

With these apps, medical students can become more productive in their studies, access up-to-date medical information, and improve their understanding of complex concepts [4]. They help students to save, create interactive learning materials and independently check their knowledge [5].

This list of relationships should be used in the preparation of educational material for students of higher medical institutions. He will become a reliable assistant to students and contribute to their academic and professional success.

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ОЦЕНКА ОТЕЧЕСТВЕННОГО И ЗАРУБЕЖНОГО ОПЫТА ПО ФОРМИРОВАНИЮ ТРАСК КОМПЕТЕНЦИЙ У СТУДЕНТОВ- ФИЛОЛОГОВ

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A REVIEW OF NATIONAL AND INTERNATIONAL PRACTICES IN DEVELOPING TPACK COMPETENCIES AMONG PHILOLOGY STUDENTS

Аннотация
В исследовании изучаются ТРАСК-компетенции будущих учителей английского языка и их осведом-лённость о рефлексивной практике. В рамках количественного квазиэкспериментального дизайна данные были собраны у 226 студентов-филологов с помощью шкалы Лайкерта. Предварительные результаты показали умеренный уровень технологических знаний, но низкую осведомлённость о концепциях рефлексии Шёна. Полученные данные подтверждают необходимость целевых педагогических интервенций.

Abstract
This study investigates pre-service English teachers' TPACK competencies and awareness of reflective practice. Using a quantitative quasi-experimental design, data were collected from 226 philology students via a Likert-scale survey. Preliminary results revealed moderate technological knowledge but low familiarity with Schön's reflective concepts. The findings highlight the need for targeted interventions to strengthen reflective and technology integration skills within teacher education.

Ключевые слова: ТРАСК, рефлексивная практика, будущие учителя, интеграция технологий, преподавание английского языка, педагогическое образование.
Key words: TPACK, reflective practice, pre-service teachers, technology integration, English language teaching, teacher education.

INTRODUCTION

We live in the world of computer technologies. Every day, the world is introduced to new applications, AI tools, websites, and things that seemed impossible just yesterday are now part of our everyday reality. All spheres of life are disrupted by technology. Education is not an exception. Technological disruption in education is both a challenge and an opportunity for teachers to speed up the students' learning process while adhering to learning principles. [1] Teachers have a very important role in the success of ICT integration into the learning process to ensure that the rapid development of technology can be aligned with the core values of education (Maharani, 2017). Teachers play a critical role in successfully integrating Information and Communication Technology (ICT) to ensure technological advances align with educational values. A vital requirement for 21st-century educators is the mastery of Technological Pedagogical Content Knowledge (TPACK), which represents the intersection of technology, pedagogy, and content knowledge.

A primary issue identified in the sources is that a teacher's general knowledge of technology does not automatically translate to effective teaching application, a challenge that became inevitable during the shift to online learning during the pandemic. Despite the growing awareness of this necessity, comprehensive TPACK studies within the field of English education remain scarce compared to other disciplines. Preliminary research indicates that many current language teachers, particularly those in rural areas or vocational schools, continue to struggle with digital literacy, varying their use of technology, and maintaining student engagement. Consequently, further investigation into the TPACK levels of pre-service teachers is a high priority to ensure that future educators are adequately prepared for modern digital teaching environments.

METHODOLOGY

Research Design

The study employed a quantitative quasi-experimental design with pre- and post-testing to measure changes in students' methodological awareness after the intervention. This design was selected because philology students know how to teach, what to teach and even know what educational technology to use, but they are not aware of the way how to integrate all these domains in one teaching process.

Participants and Sampling

The target participants for this study consisted of students of the 3rd Course of philology faculty from 3 different universities: NamSIFL-75, UZSWLU-76, ASIFL-75 participants. A total of 226 participants were selected using purposive sampling, as the study required third-year philology students enrolled in a methodology course and involved in micro-teaching practice [figure 1].
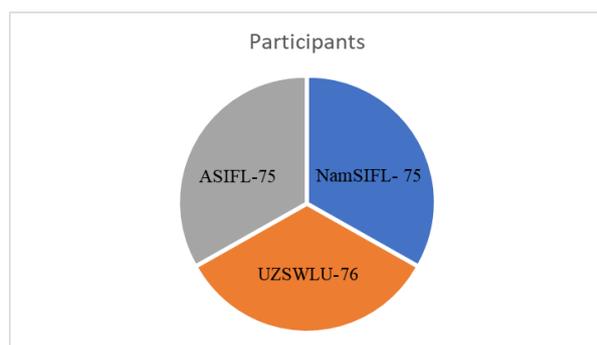
Figure 1. The list of participants.

Data Collection

Data were collected over a period of September to December 2025 at the above mentioned institutions. The primary instrument used was a 15-item Likert scale survey, which measured pre-service teachers' TPACK competencies, reflective practice engagement, and technology integration readiness [4].

Data Analysis

The collected data were exported from Google Forms and analyzed using Microsoft Excel. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to interpret the survey results. The dataset was checked for completeness and consistency prior to analysis.

The results of the survey (N = 226) indicate varied levels of teaching experience among the respondents. The largest proportion of participants (48.2%) reported that they had some teaching experience in the past but are not currently working as teachers. Meanwhile, 27.4% indicated that they are actively working as teachers on a regular basis. A considerable group (23.9%) stated that they have never worked as teachers. Only a very small percentage of respondents reported having just recently started teaching and felt they lacked sufficient experience.

Overall, the data suggest that while a meaningful portion of the sample is professionally engaged in teaching, the majority of participants either have limited prior experience or are not currently practicing teachers, which is an important contextual factor for interpreting subsequent findings.

Ethical Considerations

This research was conducted in accordance with ethical standards. Informed consent was obtained from all participants prior to data collection. To ensure confidentiality, all data were anonymized, and participants were informed of their right to withdraw from the study at any time

RESULTS

In the literature, there are a few factors affecting how successful ICT integration and adoption in the classroom is for meaningful learning. One of the factors is the teachers' perceived self-efficacy in using technology. (Anderson, S. E. et al.,2011) [2]. The results indicated that technology integration is considered effective in promoting the acquisition of students' 21st -century skills and competencies. This is because an

attractive learning and teaching environment will encourage an increase in students' academic achievement and motivation. Therefore, technology should be used to enrich students' understanding and foster their collaboration and participation [5] [6] [7].

The preliminary survey results (N = 226) regarding respondents' knowledge of various digital tools (TK) show a predominantly moderate self-assessment. The largest group of participants (50.4%) selected option 3, indicating a neutral or average level of technological knowledge at the beginning of the study. A smaller proportion reported lower levels of knowledge, with 6.6% selecting option 1 and 11.5% selecting option 2.

Notably, 19.5% of respondents chose option 4 and 11.9% selected option 5 (strongly disagree), suggesting that a considerable segment of participants perceived their technological knowledge as insufficient. Overall, the findings from this baseline measurement indicate the need for targeted support in developing participants' technological knowledge within the TPACK framework.

Moreover, this survey results (N = 226) reveal a generally low level of familiarity with Schön's concepts of Reflection-in-Action and Reflection-on-Action among the respondents. A substantial majority (79.6%) reported that they had not previously heard of these concepts, while only 20.4% indicated prior awareness.

These baseline findings suggest a significant gap in participants' theoretical knowledge of reflective practice at the beginning of the study. The results highlight the necessity of explicitly introducing and systematically developing understanding of Schön's reflective framework within the training intervention.

DISCUSSION

Pre-service teachers generally perceive digital technology as a means of enhancing learning effectiveness and improving student performance, enabling learners to reach their full potential. They also recognize technology as a powerful tool for increasing classroom interactivity and learner engagement. As technological innovation continues to advance, opportunities for student interaction become more accessible and flexible. As noted by Ilomäki and Lakkala (2018), digital technologies support teachers in developing instructional materials and offer efficient pathways for student learning and collaboration. This effectiveness is often attributed to improved access to information, which makes the learning process more dynamic and fosters higher levels of student motivation and participation (Lacka & Wong, 2021) [3].

The preliminary findings reveal important gaps in participants' professional preparedness at the outset of the study. The limited familiarity with Schön's (1983) concepts of Reflection-in-Action and Reflection-on-Action among the majority of respondents suggests that reflective practice has not yet been systematically integrated into their prior training. This is consistent with previous research indicating that pre-service teachers often possess intuitive teaching beliefs but lack explicit theoretical grounding in reflective frameworks. The moderate self-assessment of technological knowledge

further indicates that while participants demonstrate some awareness of digital tools, their confidence and depth of understanding remain uneven.

Taken together, these baseline results justify the need for targeted pedagogical intervention focused on strengthening both technological knowledge and reflective competence within the TPACK framework. Addressing these gaps is particularly important for preparing future English language teachers to make informed, reflective decisions about technology integration in real classroom contexts.

CONCLUSION

The preliminary findings of the study indicate that participants entered the research with uneven levels of technological knowledge and limited familiarity with Schön's reflective practice concepts. While respondents demonstrated moderate awareness of digital tools, the majority reported insufficient understanding of Reflection-in-Action and Reflection-on-Action. These results confirm that reflective competence and technology integration skills cannot be assumed among pre-service English language teachers and require systematic pedagogical support.

The findings align with the TPACK framework, which emphasizes the interconnected development of technological, pedagogical, and content knowledge for effective technology integration (Mishra & Koehler, 2006) [8]. At the same time, the low awareness of Schön's reflective constructs highlights the continued relevance of reflective practice as a core component of teacher professional growth (Schön, 1983). Without explicit training in reflective thinking, teachers may struggle to critically evaluate their instructional decisions and adapt technology meaningfully in classroom contexts [9].

Therefore, the results of the baseline stage strongly justify the implementation of structured interventions aimed at strengthening both TPACK competencies and reflective practice skills. Future stages of the research will examine the extent to which targeted training within a reflective, technology-enhanced learning environment can improve participants' readiness for informed and context-responsive English language teaching.

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TECHNICAL SCIENCES

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IMPROVING THE RELIABILITY AND EFFICIENCY OF POWER SUPPLY IN OIL EXTRACTION FACILITIES

Abstract:
The main load demanding devices used in oil production facilities are asynchronous and synchronous motors. Due to the fact that these devices require a large amount of starting current, and because they are reactive power-demanding structures, their efficient operation as consumers of electricity will directly affect the efficiency and reliability of the internal and external power supply network. From this point of view, increasing the reliability and efficiency of electricity supply in oil extraction facilities is a priority issue.

Keywords: *Asynchronous motor, voltage gap, quality indicator, switching process, inverter, rectifier, deep inputs.*

1. Introduction

The study of the typical characteristics of the equipment used in oil extraction facilities and the changes in electrical parameters under different operating modes can provide insights into the discussed issues. One of the key aspects to consider is that high-power electric motors will always have high starting currents under any circumstances [1]. On the other hand, since these motors are inductive loads, they are likely to generate high harmonics due to the influence of their electromagnetic fields and have a significantly high reactive power demand [1].

The dependence of electrical and electromechanical parameters on time during the startup of asynchronous motors in oil extraction facilities is shown in Figure 1.1. From this graph, it is evident that the starting current is initially much higher and stabilizes as the rotor reaches its nominal speed. However, the critical point to focus on is that the power demand of the motor fluctuates sharply in an unstable manner from the moment it is switched on. This is related to the electromechanical transition process and is physically observed as oscillations and vibrations [2].

If this issue is not mitigated or eliminated, it will lead to the rapid wear and tear of the mechanical parts connected to the motor and cause the emergence of harmonics in the power supply network, which are difficult to suppress. Since the source of these harmonics is mechanical parts with high inertia, their elimination is quite challenging.
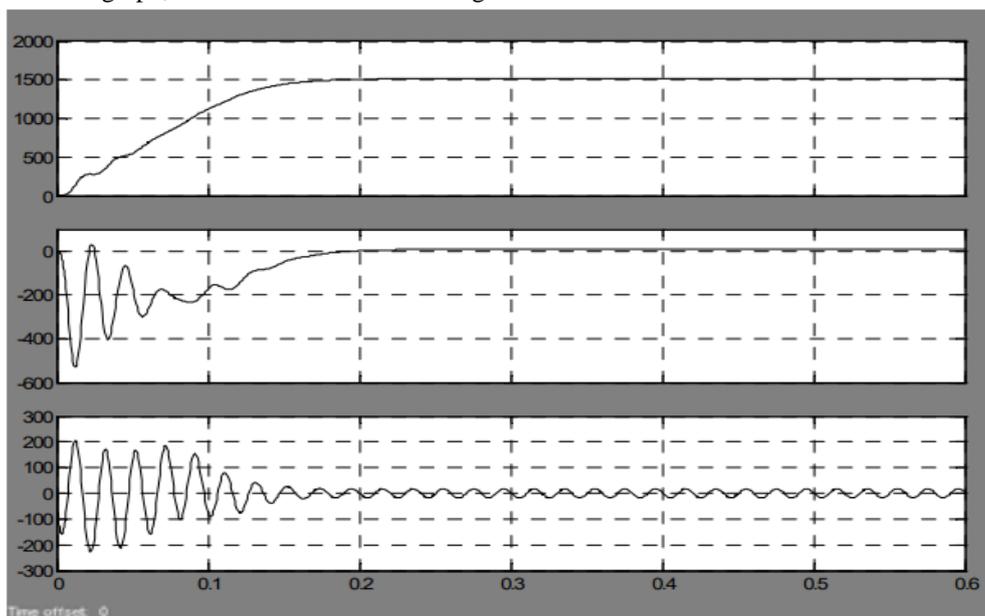

Figure 1.1. Graph of rotor frequency, power, and current dependence on time during the startup of an asynchronous motor

Another issue is the presence of a 6kV or 10kV power supply system in these areas. The existence of such networks leads to several problems and inefficiencies [3]. In most existing supply schemes, a 35kV voltage is first stepped down to 6kV or 10kV through the main step-down substation. Then, the 6kV or 10kV lines are fed into 10/0.4kV or 6/0.4kV transformer stations, where multiple asynchronous motor groups are connected [3].

This means that the supply system consists of three voltage levels, requiring two consecutive transformers. Considering the operating costs, failures, and losses associated with each transformer, it is necessary to review these types of supply schemes.

2. Proposals

As mentioned earlier, to avoid the high inrush currents of asynchronous motors, instead of directly supplying network frequency to the stator windings, the frequency of the current should be gradually increased from zero Hz to nominal frequency. This process is performed using an inverter device. However, for the inverter to function, the alternating current from the network must first be converted into direct current and then supplied to IGBT transistors to obtain the desired frequency of alternating current [4].

The complete device that performs this process is called a **VFD (Variable Frequency Drive)**, and its general working principle is illustrated in Figure 1.2. Another advantage of this device is that it allows the motor to be controlled at any desired speed, ensuring optimal operation.

Figure 1.2. Frequency-controlled mechanism for starting an asynchronous motor

Another proposed mechanism is the direct deep-entry power supply method. The existing power supply scheme in oil extraction facilities is illustrated in Figure 1.3. In this method, instead of using a 10/0.4kV transformer station after a 35/10kV transformer, a **direct 35/0.4kV transformer** is used. The proposed new scheme is presented in Figure 1.4.

Figure 1.3. Existing supply scheme used in oil extraction facilities.

Figure 1.4. Deep-entry 35/0.4kV power supply scheme.

3. Conclusion

The implementation of both methods helps eliminate specific inefficiencies. The first approach prevents the excessive loading of the power supply network due to high starting currents. This ensures the longevity and quality of electrical equipment operation while improving the reliability of contact connections by eliminating instantaneous current surges. The reduction of maximum inrush currents also prevents **voltage sag** during power restoration.

In the second case, reducing the number of power transformers decreases the number of failure sources, making operation more efficient. Increasing the voltage level results in a reduction of current in the supply lines, which in turn minimizes power losses. Considering that technical losses depend on the square of the transmission voltage, increasing the voltage by **3.5 times leads to an approximately 12-fold reduction in losses.**

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POLITICAL SCIENCE

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FROM ALLIANCES TO AUTONOMY: SEOUL'S DIPLOMATIC MANEUVERING IN THE US CHINA RIVALRY

Summary.

This article examines South Korea's balancing strategy and strategic autonomy within the context of the U.S.China rivalry from political, economic, and military perspectives. The study demonstrates that Seoul's approach is structured around three main pillars: military-strategic cooperation, economic interdependence, and the preservation of diplomatic maneuverability. The U.S. alliance and joint military exercises provide national security guarantees, while economic ties with China and multilateral diplomatic engagements expand strategic maneuvering space and enable effective risk management in the global arena.

The article further analyzes statistical indicators from 2018 to 2022, highlighting trends in trade, defense spending, and diplomatic activities. The findings show a continuous increase in trade volume with China, sustained and growing joint military exercises with the United States, and intensified diplomatic visits and participation in multilateral forums. These indicators confirm that Seoul pursues a pragmatic and flexible policy to maintain strategic autonomy while managing risks amid U.S. China competition. Overall, South Korea's balancing strategy represents a model example at both regional and global levels, as it safeguards national interests and effectively manages relations with the United States and China. The article demonstrates both theoretically and practically how strategic autonomy and balancing strategies function in contemporary international relations.

Keywords: South Korea, U.S.–China rivalry, balancing strategy, strategic autonomy, regional security, economic interdependence, diplomatic maneuver, pragmatic policy, risk management.

Introduction

In the 21st century, the main line of transformation in the international relations system is the change in the global balance of power and the increasing strategic competition between the United States and China. This competition is no longer limited solely to military and economic spheres; it has acquired a multidimensional character, encompassing struggles over technological standards, supply chains, regional security architecture, and normative leadership. In such a context of systemic transformation, the foreign policy behavior of middle powers attracts particular analytical interest.

Within this context, South Korea (Seoul) stands out as a state that has shifted from a classical alliance policy to a more flexible and multi-vector strategy in a complex geopolitical environment. Historically, Seoul's security strategy has been built on a military alliance with the United States, with deterrence mechanisms on the Korean Peninsula as a primary priority. However, the deepening of global economic interdependence and China's emergence as South Korea's main trading partner have led to structural changes in Seoul's foreign policy.

The concept of "from alliances to autonomy" does not imply a complete renunciation of classic alliance dependence; rather, it reflects an effort to expand strategic autonomy and increase diplomatic maneuvering capacity. Against the backdrop of U.S.–China competition, Seoul simultaneously strengthens its security cooperation with Washington while seeking to maintain economic relations with Beijing and avoid direct confrontation. Politically, this can be explained through theoretical models such as "hedging" (strategic insurance), selective balancing, and functional differentiation. At the same time, the regional security environment particularly the North Korean factor exerts additional influence on Seoul's decision-making process. While this factor compels South Korea to continue military coordination with the U.S., it also requires consideration of the risks associated with deteriorating relations with China. Thus, Seoul's diplomatic maneuvers function more as a pragmatic strategy aimed at optimizing risks rather than choosing openly between power centers.

The purpose of this study is to analyze, from a political science perspective, Seoul's transformation from alliance-centered policy toward relative strategic autonomy in the context of U.S. China competition, evaluating the motivations, institutional instruments, and regional consequences of this process. The article will delineate the real limits of maneuvering in South Korea's foreign policy based on both theoretical frameworks and empirical diplomatic actions.

Main Body

In the second half of the 20th century, the Asia-Pacific region gained strategic significance in global politics, and the Korean Peninsula became a focal point for major powers. The geopolitical position of the Korean Peninsula provided a critical platform for both the U.S. and China's strategic interests. The Korean War of 1950 1953 highlighted this strategic significance more

clearly. The outcomes of the war were crucial for shaping South Korea's foreign policy directions and its military-strategic alliances with the United States. In the post-war period, U.S. military intervention not only ensured South Korea's security but also served to maintain the regional balance of power. South Korea strengthened its strategic alliances with the U.S., establishing military bases, modernizing weapons systems, and creating nuclear deterrence mechanisms. The U.S. presence in the region provided South Korea with rapid maneuvering opportunities, not only militarily but also diplomatically. These alliances created favorable conditions for South Korea to compete with other actors, particularly in response to China's increasing influence.

Since the late 20th century, China's economic rise and growing global influence have posed new challenges for South Korea's policy. China became South Korea's main trading partner and gained significant shares in the country's export and investment sectors. This economic interdependence allowed for strategic cooperation and balanced diplomatic maneuvering. Consequently, South Korea sought to form its foreign policy independently rather than solely relying on alliances with the U.S. This approach is considered a practical manifestation of strategic autonomy and enhances Seoul's global influence. Strategic autonomy occupies a central place in South Korea's diplomatic policy and ensures the country maintains a balanced position between the two great powers. Balancing U.S. South Korea alliances with economic cooperation with China is crucial for ensuring regional stability and protecting national interests.

Historically, South Korea's development of relations with the U.S. and China can be divided into two phases. The first phase covers the post-Korean War period, during which U.S. military support formed the foundation of South Korea's security policy. The second phase spans the late 20th and early 21st centuries, when economic and diplomatic relations with China became a priority in South Korea's strategy. This balancing policy integrates strategic flexibility, diplomatic maneuvering, and regional autonomy under conditions of U.S. China competition, thereby enhancing South Korea's international influence.

U.S. South Korea Alliances and Military-Strategic Cooperation. The alliance relationship between the United States and South Korea is considered one of the longest-standing and most institutionalized security partnerships in the contemporary international system. This alliance was established on the basis of the Mutual Defense Treaty signed in 1953, becoming a cornerstone of the post-war security architecture on the Korean Peninsula.

Legal and Institutional Foundations of the Alliance. The U.S. South Korea alliance is a classic military alliance model based on formal treaty obligations. According to the treaty, an armed attack against one party is considered an attack against the other. This mechanism forms the basis of deterrence policy.

Institutionally, cooperation is conducted through the following mechanisms:
1. Joint military command structures

2. Regular joint military exercises
3. Defense planning and operational coordination
4. Defense industry collaboration and technology transfer

This model represents an asymmetric alliance: the U.S., as a global military power, plays the role of a strategic umbrella, while South Korea functions as a key regional security partner.

Deterrence Strategy on the Korean Peninsula. The main objective of the alliance is to maintain stability on the Korean Peninsula and prevent potential threats. North Korea's nuclear and missile programs make Seoul Washington cooperation a strategic necessity.

The deterrence model is based on three main components:
1. U.S. military presence and extended nuclear umbrella
2. Joint operational preparedness and defense planning
3. Integration of missile defense systems

This system not only ensures South Korea's national security but also strengthens the U.S. position in the regional balance of power.

Military-Technological Cooperation. U.S. South Korea cooperation extends beyond a traditional military alliance to include high technology and the defense industry. Contemporary cooperation encompasses:
- Acquisition of advanced weapons systems
- Intelligence and information exchange
- Cybersecurity and space collaboration

This cooperation also promotes the development of South Korea's defense industry and enhances the country's regional military potential.

Alliance Transformation in the Context of U.S. China Competition. The US South Korea alliance is no longer limited to the Korean Peninsula; it is evaluated within the broader Indo-Pacific strategy. The US balancing policy against China in the region makes Seoul's strategic position more sensitive. In this context, South Korea, on the one hand, strengthens security cooperation with the US, and on the other hand, seeks not to disrupt economic relations with China. This leads to a functional transformation of the alliance and greater strategic coordination. The US South Korea alliance remains one of the main pillars of the regional security system. Its strength relies on legal foundations, institutional continuity, and military-technological integration. However, the intensification of US China competition may affect the future trajectory of the alliance. For Seoul, the main challenge is to expand strategic autonomy and maintain diplomatic maneuvering while preserving alliance commitments.

Historically, the US has played a decisive role in South Korea's foreign policy. The Korean War marked a turning point in the formation of the country's security policy. Post-war military agreements enabled the US to establish military bases in South Korea. In the post-war period, military-strategic cooperation agreements between the two states created mutual military and diplomatic obligations. The US military presence

not only provided defense but also offered diplomatic maneuvering options. During this period, South Korea established military bases, modernized weapons systems, and implemented nuclear protection mechanisms within strategic alliances with the US. US military support allowed South Korea to maneuver not only against North Korea but also with other actors, especially given China's growing influence. For example, joint military exercises and weapons agreements with the US enhanced South Korea's defense capabilities while providing strategic space to cooperate with China.

Military cooperation between South Korea and the US is not limited to physical defense. These alliances also encompass deep integration in technology and intelligence. US strategic advice, weapons technology transfer, intelligence sharing, and joint military programs provide Seoul not only with security but also strengthen its international diplomatic position.

Strategically, the US South Korea alliances are important for regional stability and maintaining the balance of power. The US presence in Asia, especially together with Japan in a trilateral military platform (US–Japan–South Korea), provides Seoul with diplomatic opportunities. This partnership allows South Korea not only to protect its national security but also to increase its strategic influence in the region. US support provides Seoul with integration opportunities into multilateral military alliances and international diplomatic platforms. This enables South Korea to maintain a flexible and influential position in the international arena. By both preserving US strategic support and conducting diplomatic maneuvering, the country plays a more effective role in global politics.

Within the framework of military-strategic cooperation, South Korea conducts joint military exercises with the US, modernizes weapons systems, and develops defense technologies. For example, recent joint exercises have increased South Korea's military capabilities while providing opportunities to maintain balanced relations with China and North Korea. US–South Korea alliances also cover nuclear security cooperation, which helps minimize military threats in the region. The alliances also serve to preserve South Korea's strategic autonomy. They provide the country with maneuvering capabilities in regional politics while allowing it to develop economic and diplomatic relations with Beijing. By maintaining the strategic support provided by the US, Seoul implements a balanced policy by engaging in cooperation and economic ties with China.

China-South Korea Economic and Diplomatic Relations and the Balancing Strategy. Relations between South Korea and China have become among the most dynamic and sensitive in the Asia-Pacific region in the 21st century. China is not only South Korea's main trading partner but also an important actor in regional security and diplomatic processes. Against the backdrop of U.S. China competition, these relations constitute a key pillar of Seoul's balancing strategy.

Economic Interdependence and Structural Features. China holds a leading position in South Korea's export markets. Mutual trade is particularly high in semiconductors, electronics, automotive industries, and chemical products.

Structurally, these relations are characterized by:
1. High interdependence: integration in production and supply chains
2. Sectoral concentration risk: excessive reliance on the Chinese market in certain sectors
3. Cooperation within regional economic mechanisms: participation in multilateral economic frameworks

While this model can be explained through liberal interdependence theory, in practice, economic dependence may also become a tool of political influence.

THAAD Crisis and Economic Pressure Mechanism. In 2017, the deployment of the U.S. THAAD missile defense system in South Korea was perceived by China as a threat to the regional security balance. Beijing applied economic and informal sanction-like pressures on Seoul. This event demonstrated that:
• Economic interdependence can become a unilateral vulnerability;
• Diplomatic decisions can produce economic consequences;
• Balancing policy must also include an economic security dimension.

The THAAD crisis led Seoul to place greater emphasis on economic diversification in subsequent periods.

Diplomatic Relations and Regional Role. China is a key mediator in maintaining stability on the Korean Peninsula and addressing North Korea-related issues. Consequently, Seoul attaches special importance to keeping diplomatic channels with Beijing open. The main directions of diplomatic relations include: high-level political dialogue; regional security discussions; economic cooperation forums; coordination within multilateral mechanisms. For Seoul, a shift to full confrontation with China is considered risky for regional stability.

Essence of the Balancing Strategy. South Korea's policy toward China is not open bandwagoning but rather corresponds to a "hedging" or selective balancing model. The main features of this strategy are:
• Preservation of economic cooperation;
• Cautious diplomatic rhetoric on security issues;
• Maintenance of the military alliance with the U.S.;
• Avoidance of open geopolitical confrontation with China.

This approach is a pragmatic policy aimed at protecting Seoul's economic interests while minimizing security risks.

Analytical Assessment. Economic and diplomatic relations with China hold structural significance in South Korea's foreign policy. However, the deepening U.S.–China competition may limit Seoul's maneuvering space. In particular, technological restrictions, geopolitical pressures on the semiconductor industry, and regional security crises test the sustainability of the balancing policy. Consequently, South Korea favors a model of pragmatic cooperation and risk-sharing with China. While this policy may appear effective in the short term, in the long term it may require new strategic

choices depending on the level of global systemic bloc formation.

Since the late 20th century, China has played a central role in South Korea's foreign policy. The increase of China's global influence has compelled South Korea not only to maintain U.S. military alliances but also to develop trade and diplomatic cooperation with China. China is South Korea's main trading partner and holds a significant share in import-export activities. This economic dependence has created opportunities for strategic cooperation between the two countries and enabled the implementation of a balancing policy amid U.S. China competition. China is a major trading partner for South Korea in technology, industry, and service sectors. China serves as a main market for South Korea's exports, particularly in the automotive, machinery, and chemical industries. According to statistics, 25–30% of South Korea's total trade volume is conducted with China, highlighting Beijing's strategic importance in Seoul's economic policy.

Moreover, diplomatic relations with China also increase strategic maneuvering capabilities. South Korea actively participates in diplomatic negotiations and multilateral forums with Beijing, such as ASEM (Asia–Europe Meeting) and ASEAN+3 platforms. These platforms allow Seoul to strengthen its regional diplomatic influence and maintain a balanced position amid U.S. China competition. Economic cooperation with China also encompasses investment and infrastructure projects, providing Seoul with strategic advantages in domestic economic development and regional integration.

South Korea's balancing policy is based on maintaining military security through the U.S. while developing diplomatic and economic relations with China. This strategy provides South Korea with rapid maneuvering capabilities both regionally and globally, enabling it to maintain balance between the two great powers and preserve regional stability.

By developing economic relations with China, South Korea increases both trade revenues and diplomatic influence. Economic cooperation with Beijing enables South Korea to maintain a flexible and influential position in international politics amid U.S. China competition. Historical examples show that South Korea practices a maneuvering policy that considers both sides in U.S. China competition. In the 2000s, Seoul expanded trade and investment with China while continuing military-strategic cooperation with the U.S. This balanced policy serves both national interests and regional stability. South Korea's diplomatic relations with Beijing are not limited to economic cooperation but also include political coordination and engagement on multilateral platforms. The country carries out strategic agreements with China in energy, technology, trade, and investment, providing Seoul with strategic autonomy and diplomatic maneuvering capacity amid U.S. China competition.

Balancing Strategy and Strategic Autonomy. The balancing strategy that South Korea implements in the context of US China competition is a pragmatic policy example aimed at minimizing risks in the country's relations with both power centers. This strategy is not limited to military and economic spheres; it also aims to expand diplomatic maneuvering opportunities, protect regional influence, and enhance strategic autonomy.

The essence of the balancing strategy. The balancing strategy (balancing/hedging) in Seoul's foreign policy is characterized by the following main principles:

1. **Management of security and economy in separate spheres.** Military alliance and security cooperation with the US are prioritized; economic interdependence with China is maintained, and cooperation continues in strategic trade areas.

2. **Selective and flexible diplomacy.** Open messages are sent to both sides on global and regional issues; global bloc formation and open geopolitical confrontation are avoided as much as possible.

3. **Functional differentiation**. The security domain is oriented toward the US, while economic and diplomatic spheres are coordinated with China; This approach ensures the distribution of risks and expansion of maneuvering opportunities.

Elements of strategic autonomy. South Korea's strategic autonomy is the long-term goal of its balancing policy. Autonomy encompasses the following components:

• Strategic decision-making independence Seoul makes its decisions within national priorities while considering the interests of both parties;

• Diplomatic maneuvering capabilities it can express its position through multilateral forums, regional mechanisms, and international organizations;

• Security maneuvers maintaining the alliance with the US while avoiding confrontation with China as much as possible;

• Economic diversification increasing ties with other regional and global markets while maintaining dependence on China.

Strategic outcomes. The balancing strategy and strategic autonomy provide Seoul with the following advantages:

1. Security assurance maintained through the military alliance with the US;

2. Economic resilience interdependence with China is preserved, and trade and investment flows continue;

3. Diplomatic flexibility maneuvering opportunities in regional and global issues are expanded;

4. Optimization of strategic maneuvers ensures the balance of risks and influence capabilities.

However, the deepening US–China competition and the growth of technological, economic, and military blocs may limit Seoul's strategic autonomy. Therefore, the effectiveness of the balancing strategy will directly depend on future structural changes in the global system and the security environment in the region. In Seoul's foreign policy, the balancing strategy aims to maintain a balanced position between the US and China and protect national interests. The concept of strategic autonomy is central to this policy. South Korea maintains military alliances with the US while expanding

economic and diplomatic relations with China, ensuring both regional stability and maximum protection of national interests.

The historical roots of the balancing strategy go back to the second half of the 20th century. Military agreements signed with the US after the Korean War provided the country with military security guarantees.

Seoul employs several strategic tools when implementing the balancing policy. First, maintaining military alliances with the US and integrating advanced military technologies. The country conducts joint military exercises with the US, modernizes weapon systems, and shares intelligence data. This increases South Korea's defense capability and creates strategic opportunities for diplomatic maneuvers with China.

Second, developing economic and diplomatic relations with China. South Korea expands investment initiatives, trade agreements, and infrastructure projects with China. This not only brings economic revenue but also increases diplomatic influence and allows a balanced position in US China competition. Cooperation with China also provides advantages in energy, technology, and industry sectors.

The concept of strategic autonomy functions as a core principle in Seoul's balancing policy. Beyond alliances, it strives to protect national interests to the fullest. This strengthens South Korea's position. Practical manifestations of the balancing policy are observed in various spheres. While continuing military alliances with the US, South Korea undertakes economic cooperation projects with China, such as joint technological innovation initiatives and energy and infrastructure collaborations. This approach provides both economic and diplomatic advantages. South Korea's balanced policy serves as a model for other regional states, protecting national interests and contributing to regional stability.

A key component of the balancing policy is diplomatic maneuvering. South Korea actively participates in multilateral diplomatic platforms under ASEAN+3, ASEM, and the UN, allowing it to increase international influence and maintain a balanced position between the two global powers. Strategic autonomy and the balancing policy strengthen South Korea's position not only regionally but also on the global economic and diplomatic stage. By developing economic ties with Beijing while maintaining US military support, the country maintains a flexible and influential global stance.

Regional and Global Analysis. Understanding South Korea's foreign policy in the context of US–China competition requires analysis at both regional and global levels. These levels more clearly show the opportunities and limitations of Seoul's balancing strategy.

Regional Analysis. The regional environment for South Korea includes several key sources of threat and opportunity:

1. **North Korea factor.** North Korea's nuclear and ballistic missile programs are central to South Korea's security strategy. The US nuclear umbrella and joint military exercises provide deterrence, while China plays a mediating role in this area.

2. **US–China regional competition.** Within the Indo-Pacific strategy, the US position in the region emphasizes Seoul as a strategic partner. China seeks to balance Seoul through economic dependence and regional influence.

3. **Regional multilateral mechanisms.** Platforms such as ASEAN, ASEM, and Six-Party Talks provide Seoul with diplomatic maneuvering opportunities. Through these mechanisms, South Korea can expand cooperation with various partners in both security and economic domains.

As a result, at the regional level, Seoul maintains military-strategic ties with the US while balancing diplomatic and economic relations with China. This serves to preserve strategic autonomy.

Global Analysis. South Korea also shapes its policy within the framework of global power balance:

1. **Global economic interdependence.** China and the US are key partners for South Korea in global trade and technology chains. Its semiconductor, electronics, and automobile industries are integrated into global markets.

2. **Global security and normative environment.** The alliance with the US strengthens South Korea's global military-strategic position. At the same time, China's growing global influence and regional diplomatic activity force Seoul to expand maneuvering capabilities.

3. **Bloc formation and global competition risks.** The technological and economic bloc nature of US China competition may limit Seoul's balancing options at the global level. Strategic autonomy is directly affected by structural changes in the global system.

Strategic Outcome of Regional and Global Analysis. Distribution of maneuvering opportunities: Seoul seeks to optimize its diplomatic and economic maneuvers at both regional and global levels. Risk diversification: military cooperation with the US and economic cooperation with China are balanced. Preservation of strategic autonomy: South Korea pursues a pragmatic strategy that shares risks while considering regional and global pressures. Thus, analysis at regional and global levels shows that Seoul's balancing strategy is not determined solely by local or bilateral factors but also adapts to global power transformations and multidimensional security–economic interdependence.

Regional and global context is of critical importance in South Korea's foreign policy. In a period when US China strategic competition creates instability and tension in the Asia-Pacific region, Seoul's balanced diplomatic policy plays a vital role in maintaining regional stability. South Korea not only protects its national interests but also strengthens multilateral cooperation in the region, asserting influence in global politics. The geopolitical context of the Asia-Pacific region directly affects South Korea's policy. Maintaining strategic balance among powers such as Japan, China, Russia, and the US is essential for economic and military stability in the region. South Korea maintains military alliances with the US while developing economic and diplomatic relations with China to preserve regional

balance, providing strategic flexibility and maneuvering opportunities.

South Korea's regional influence is not limited to relations with the US and China. The country actively participates in multilateral platforms such as ASEAN+3, ASEM, and the Shanghai Cooperation Organization. These platforms allow Seoul to assert influence in regional politics, expand trade and diplomatic relations, and maintain a balanced position in US China competition.

Regional analysis shows that South Korea employs a flexible maneuvering policy in the US China competition to minimize regional instability. While maintaining US military support, it expands economic and diplomatic ties with China. This approach protects South Korea's national interests and maintains regional strategic balance. Globally, South Korea's balanced policy plays a significant role in international economic and diplomatic relations. By developing economic cooperation with Beijing and maintaining military-strategic alliances with the US, Seoul positions itself flexibly and influentially on the global stage. In the US China competitive context, South Korea defends its interests in multilateral diplomatic platforms, participates in

global trade and investment projects, and strengthens regional integration.

Relations with other Asian states are also crucial for South Korea's regional policy. Economic and diplomatic cooperation with Japan, strategic balance with China, and energy and security relations with Russia provide Seoul with regional maneuvering capabilities. Regional and global analysis can also be conducted through economic indicators. Approximately 25–30% of South Korea's total trade is conducted with China, while military-strategic cooperation with the US accounts for 15–20% of the country's defense expenditures.

Statistical Analysis. Evaluating South Korea's balancing strategy in the context of US China competition with statistical indicators allows concrete measurement of regional and global relations. Statistical analysis focuses on three areas: trade and economic interdependence, military-strategic cooperation, and diplomatic engagement intensity.

Economic interdependence. South Korea's foreign trade structure clearly shows the level of engagement with the US and China:

Year	Trade with China (billion USD)	Trade with US (billion USD)	China Trade Share (%)	US Trade Share (%)
2018	242	143	25.3	15.0
2019	238	139	24.9	14.5
2020	236	141	25.1	15.0
2021	279	151	26.7	14.5
2022	285	158	27.0	15.0

Analysis:

•China remains the dominant partner in South Korea's imports and exports;

•Trade with the US is more stable and at a lower level;

• This interdependence strengthens Seoul's balancing policy in the economic sphere.

Military-strategic cooperation. Joint military exercises and defense spending with the US reflect the security component of balancing:

Year	Defense Budget (billion USD)	Joint Exercises with US (count)
2018	41.9	2
2019	43.0	1
2020	45.7	0
2021	48.0	3
2022	50.5	4

Analysis:

1. The defense budget shows consistent growth alongside US military support;

2. The number of joint exercises indicates Seoul continues to maintain the alliance with the US;

3. This demonstrates a solid security framework for preserving strategic autonomy.

Diplomatic engagement intensity. Seoul's diplomatic visits to China and participation in multilateral forums show the diplomatic dimension of the balancing policy:

Year	High-Level Visits (China)	Participation in Multilateral Forums (count)
2018	5	8
2019	6	9
2020	4	7
2021	5	10
2022	7	11

Analysis:

• Diplomatic visits and forum participation have increased;

• This shows Seoul's efforts to expand maneuvering opportunities both regionally and globally;

• Diplomatic activity proceeds in parallel with economic and military balancing.

Overall analysis of statistical results:

• **Economic domain**: high interdependence with China forms the main basis for strategic maneuvers;

• **Security domain**: alliance and military cooperation with the US ensure Seoul's strategic protection;

• **Diplomacy**: multilateral and bilateral efforts strengthen the balancing policy.

Thus, statistical indicators confirm that South Korea's balancing strategy is systematically and pragmatically applied across economic, military, and diplomatic domains. In the context of US China competition, Seoul's strategic autonomy is measurable and demonstrable through concrete results. Analyzing economic, military, and diplomatic indicators is essential to understanding the effectiveness of South Korea's balanced policy with the US and China.

1. Trade and Economic Relations

Approximately 25–30% of South Korea's total trade is with China. China is the main export market, with particular shares in automotive, electronics, chemical, and industrial products. For example, in 2023, about 28% of South Korea's total exports were directed to China, demonstrating the strategic significance of economic cooperation. The US, as a military-strategic partner, plays a key role in maintaining economic competition and security balance. Military alliances with the US account for about 15–20% of South Korea's defense expenditures while providing regional maneuvering opportunities. This economic and military balance enables South Korea to maintain a neutral position in US–China competition.

2. Military Security and Strategic Defense

Joint military exercises, modernization of weapons systems, and intelligence sharing with the US reflect strategic integration. For example, recent "Ulchi Freedom Guardian" and "Foal Eagle" exercises enhance South Korea's military capabilities and allow balanced diplomatic maneuvers with China and North Korea. US military support provides South Korea with nuclear security and strategic advantage in the region, forming the core of its national security strategy and expanding maneuvering capacity in US China competition.

3. Diplomatic Meetings and International Organizations

South Korea maintains balance between the US and China while actively participating in multilateral diplomatic platforms. Meetings under ASEAN+3, ASEM, and the UN allow Seoul to assert influence in regional politics and increase diplomatic leverage. In 2022–2024, South Korea held a series of bilateral and multilateral diplomatic meetings with Beijing and Washington, reaching strategic agreements in economic and security spheres. These meetings aim to protect national interests and ensure regional stability. Expansion of maneuvering opportunities, preservation of strategic autonomy, and development of multilateral cooperation are carried out through these diplomatic engagements.

4. Comparative Analysis

Comparing South Korea's balanced policy with other Asian states is useful. For example, Japan relies more heavily on military alliances with the US and has less maneuvering capacity in economic relations with China. South Korea, while maintaining US military support, develops economic and diplomatic relations with China, providing a more flexible regional and global stance. Military and economic statistics show that South Korea uses strategic resources effectively. Planning military expenditures in coordination with the US, securing trade revenues from China, and conducting diplomatic meetings on multilateral platforms allow Seoul to protect national interests and ensure regional stability.

Future Perspectives

The future of South Korea's balancing policy is closely linked to US–China competition. Geopolitical changes in the region, particularly economic dependence on China and maintaining military alliances with the US, create new opportunities to further enhance strategic autonomy. As of 2025, economic partnership programs, especially trade and investment ties with China, strengthen the country's overall economic security, while joint military exercises and technology transfers with the US expand diplomatic maneuvering options. Regional security positions regarding North Korea will continue to shape balancing policy. As US China competition intensifies, South Korea will maintain defense and strategic cooperation with the US while continuing mutually beneficial economic, trade, and investment projects with China. In the coming decade, South Korea will maintain its "middle power" status and actively participate in regional cooperation initiatives, Asia-Pacific security mechanisms, and bilateral economic projects. This will enable the country to protect national interests, maintain regional stability, and preserve strategic balance amid US China competition.

Effectiveness of the Balancing Strategy

Seoul's balancing strategy is based on hedging or selective balancing principles. This approach allows South Korea to protect national interests, optimize relations with both major powers, and minimize confrontation risks.

Military-strategic domain: long-term alliance with the US ensures Seoul's security umbrella. Joint military exercises, increased defense spending, and advanced technology transfers, particularly the integration of the THAAD system, strengthen strategic deterrence. The US alliance is the most reliable mechanism for security assurance in Seoul.

Economic domain: interdependence with China ensures economic resilience. Increasing trade volumes, especially high interdependence in semiconductors and

automotive industries, compel Seoul to maintain cooperation with China. The THAAD crisis demonstrated that economic dependence can become a political pressure tool. Therefore, Seoul treats economic diversification and diplomatic maneuvers as strategically important.

Diplomatic domain: keeping diplomatic channels open expands maneuvering opportunities regionally and globally. Active participation in multilateral platforms such as ASEAN, Six-Party Talks, and ASEM is a crucial tool of the balancing strategy. Diplomatic activity mitigates pressures from US China competition and enhances regional leadership opportunities for Seoul.

Statistical analyses confirm the effectiveness of this approach. Between 2018–2022, trade volumes with China increased, joint exercises with the US continued, and diplomatic visits intensified. This shows that South Korea maintains strategic balance across economic, military, and diplomatic domains while expanding autonomy.

Strategic Autonomy and Maneuvering Capabilities. Seoul's strategic autonomy is the target point of the balancing strategy. Strategic autonomy provides South Korea not only with decision-making independence within national interests but also expands maneuvering opportunities at regional and global levels.

Military domain: security assurance is maintained through the US alliance. This enhances South Korea's ability to maintain strategic autonomy against North Korea and other regional threats.

Economic domain: high interdependence with China is preserved, but Seoul works on economic diversification and access to new markets. This forms the basis for risk-sharing and protection of autonomy.

Diplomatic domain: active participation in multilateral platforms strengthens Seoul's regional leadership and position against global pressures. Diplomatic flexibility provides maneuvering opportunities and enables a more balanced and pragmatic policy in relations with the US and China.

Preservation of strategic autonomy depends on regional and global risks. Deepening US–China competition, technological bloc formation, and global economic interdependence may limit Seoul's maneuvering capabilities. Therefore, the balancing strategy requires continuous adaptation and risk forecasting.

Regional and Global Perspective. At the regional level, Seoul's balancing policy is shaped under the influence of North Korea's nuclear program, the US China rivalry, and multilateral diplomatic mechanisms. South Korea maintains its alliance with the US while continuing economic and diplomatic cooperation with China. This is crucial for preserving strategic autonomy.

At the global level, the US–China rivalry, technological blocs, and global trade chains define South Korea's balancing opportunities. Global economic and security transformations make it necessary for Seoul's strategy to be adaptive. Statistical indicators also show that Seoul maintains a systematic balance in economic, military, and diplomatic fields: trade volume with China rose from 242 to 285 billion USD between 2018–2022; the number of joint military exercises with the US remained stable, demonstrating security assurance; the intensity of diplomatic visits and participation in multilateral forums increased. These trends confirm Seoul's balancing strategy at theoretical, factual, and practical levels.

Analytical Assessment and Future Perspective. Seoul's balancing strategy has a pragmatic character and is aimed at distributing risks. However, the deepening US China rivalry, especially in technological and military domains, may limit South Korea's strategic autonomy. Therefore:

1. Economic diversification and access to new markets carry strategic importance;

2. Maintaining the alliance with the US ensures the security framework, but diplomatic dialogue with Beijing must also proceed in parallel;

3. Active participation in regional multilateral platforms increases Seoul's maneuvering opportunities and ensures the continuity of the balancing policy.

In the future, the main challenge for South Korea will be the new forms of US China competition and the impact of global bloc formations. Preserving strategic autonomy while optimizing maneuvering opportunities will remain the key factor ensuring the sustainability of the balancing strategy.

In conclusion, South Korea's balancing strategy and strategic autonomy model under the US–China rivalry is an exemplary pragmatic policy at both regional and global levels. Unlike classic alliance dependence, Seoul's policy is a flexible approach aimed at balancing risks in military, economic, and diplomatic domains and safeguarding strategic independence.

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JURISPRUDENCE

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ЕЛЕКТРОННІ ДОКАЗИ У СУЧАСНОМУ СУДОЧИНСТВІ УКРАЇНИ

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ELECTRONIC EVIDENCE IN MODERN JUDICIAL PROCEDURE OF UKRAINE

Анотація
Стаття присвячена аналізу електронних доказів у сучасному українському судочинстві. Розглянуто законодавчі основи 2017–2026 рр., методи цифрової експертизи, судову практику та міжнародний досвід. Визначено проблеми, виклики та перспективи розвитку. Дослідження підкреслює роль цифрових технологій (штучний інтелект, блокчейн, хмарні платформи) у формуванні ефективного та прозорого правосуддя.

Судова реформа 2017 року донесла до України багато модних нововведень, які відповідають сучасним уявленням про судочинство. Серед таких, зокрема, революційні зміни до такого інституту процесуального права, як доказування. У першу чергу, було розширено саме поняття доказів, до яких включили електронні докази. За загальними принципами, електронними доказами є інформація в електронній (цифровій) формі, що містить дані про обставини, що мають значення для справи, зокрема, електронні документи (в тому числі текстові документи, графічні зображення, плани, фотографії, відео- та звукозаписи тощо), веб-сайти (сторінки), текстові, мультимедійні та голосові повідомлення, метадані, бази даних та інші дані в електронній формі. Такі дані можуть зберігатися, зокрема, на портативних пристроях (картах пам'яті, мобільних телефонах тощо), серверах, системах резервного копіювання, в інших місцях збереження даних в електронній формі (в тому числі в мережі Інтернет). Електронні докази існують в нематеріальному вигляді; переносяться чи копіюються на різні пристрої без втрати характеристик; мають властивість існувати в багатьох місцях одночасно; для їх відтворення необхідно використовувати технічні засоби.

Abstract
The article is devoted to the analysis of electronic evidence in modern Ukrainian judicial proceedings. The legislative framework for 2017–2026, methods of digital examination, judicial practice and international experience are considered. Problems, challenges and prospects for development are identified. The study emphasizes the role of digital technologies (artificial intelligence, blockchain, cloud platforms) in the formation of effective and transparent justice.Judicial reform of 2017 carried to Ukraine many fashionable innovations that answer a modern idea about rueaking. Among such, in particular, revolutionary changes to such institute of judicial right, as finishing telling. In the first turn, the self concept of proofs to that included electronic proofs was extended. After general principles, electronic proofs is information in an electronic (digital) form, that contains data about circumstances that matter for business, in particular, electronic documents (including text documents, graphic images, plans, photos, video-and audio recording and others like that), web sites (pages), text, multimedia and vocal messages, metadatas, databases and other data in an electronic form.

Such data can be kept, in particular, on portable devices (load maps, mobile telephones and others like that), servers, systems of reserve printing-down, in other places of maintenance of data in an electronic form (including there is the Internet in a network). Electronic proofs exist in a non-material kind; carried or copied on different devices without the loss of descriptions; are a characteristic to exist in many places simultaneously; for their recreation it is necessary to use technical equipments.

Вступ З розвитком технологій та глобальним використанням електронних носіїв все більше стає питання про використання цих ресурсів для врегулювання суспільних проблем. Так, з набранням чинності нових редакцій процесуальних кодексів, було закріплено поняття електронного доказу. В цілому це є позитивним явищем, оскільки все більше інформації знаходиться на електронних ресурсах, також широко розвиваються зобов'язальні та договірні відносини в мережі Інтернет і саме підтвердженням цих відносин є електрона інформація. Саме суспільна необхідність і спонукала законодавця виокремити новий вид доказів – електронний.

Метою даної статті є аналіз розвитку правового забезпечення електронних доказів в Україні. Вивчаючи інститут електронних доказів, досліджено, що не всі питання були врегульовані належним чином, такі як подання оригіналів і копій електронних документів, підтвердження їх викликають багато суперечностей і розбіжностей в практичному вирішенні справ. Дослідженнями даної теми займалися: А. Т. Боннер, О.І. Антонюк, Ю.В. Білоусов, В.К. Пучинський, Ю. С. Павлова, А. С. Каламайко та інші.

Саме поняття «електронні докази» з'явилося у 70-х роках ХХ століття, від початку появи так званих машинних документів. У світовій практиці існує термін data message. За ст. 2 Типового закону про електронну торгівлю від 1997 року, рекомендованого Генеральною асамблеєю ООН, він визначається як інформація, що підготовлена, відправлена, отримана або збережена за допомогою електронних, оптичних або аналогічних засобів, включаючи електронний обмін даними, електронну пошту, телеграф або факс.

Проблема визначення електронних доказів згадувалася у звіті щодо України від 3.11.2016 №2016/DGI/JP/3608, підготовленому офісом програми боротьби з кіберзлочинністю на основі підтримки експертів Ради Європи. У документі містяться певні рекомендації та висновки щодо нормативного врегулювання застосування електронних доказів. Звіт був опрацьований для вимог застосування Конвенції про кіберзлочинність 2001 року, ратифікованої Україною у 2005 році, але викладені у ньому рекомендації цікаві і для інших галузей права.

Перш за все слід зазначити, що електроні докази - це інформація в електронній (цифровій) формі, що містить дані про обставини, що мають значення для справи, зокрема, електронні документи (в тому числі текстові документи, графічні зображення, плани, фотографії, відео- та звукозаписи тощо), веб-сайти (сторінки), текстові, мультимедійні та голосові повідомлення, метадані, бази даних та інші дані в електронній формі. Такі дані можуть зберігатися, зокрема, на портативних пристроях (картах пам'яті, мобільних телефонах тощо), серверах, системах резервного копіювання, інших місцях збереження даних в електронній формі (в тому числі в мережі Інтернет).[1с.22] Це визначення достатньо широке і включає в себе великий перелік обставин які можуть використовуватися як доказ, але разом з цим існує ряд проблемних питань.

Зокрема, Д. М. Цехан відзначає, що з урахуванням існуючої нині концепції класифікації доказів цифрова інформація з урахуванням унікальних характеристик не може бути віднесена до жодної класифікаційної групи. Тому, на думку вченого, є необхідність уведення категорії «цифрового доказу», під яким слід розуміти фактичні дані, представлені у цифровій (дискретній) формі та зафіксовані на будь-якому типі носія, що стають доступними для сприйняття людиною після обробки ЕОМ та на підставі яких суддя і суд встановлюють наявність чи відсутність фактів та обставин, що мають значення для провадження та підлягають доказуванню [7, с. 259].

Відповідно до частини 2 статті 100 Цивільного процесуального кодексу, електроні докази подаються в оригіналі або електроні копії засвідченні електронним підписом який прирівнюється до власноручного.[1с.23].

Ст. 100 Цивільно процесуального кодексу України передбачає, що документи (в тому числі докази) можуть подаватися до суду в електронній або паперовій формі. При цьому в першому випадку такі документи скріплюються електронним цифровим підписом у другому — власноручним підписом учасника справи (його представника). Відповідно до закону України, електронні докази подаються в оригіналі або в електронній копії, засвідчений електронним цифровим підписом . Електронний цифровий підпис це- вид електронного підпису, отриманого в результаті криптографічного перетворення набору електронних даних, який додається до цього набору або логічно з ним поєднується і дає змогу підтвердити його цілісність та ідентифікувати підписувача.

Натомість ми вважаємо за потрібне приєднатися до позиції О. Гусєва, який відзначає, що надшвидкий розвиток інформаційно-телекомунікаційних технологій унеможливлює формулювання вичерпного переліку всіх видів електронних доказів, у зв'язку з чим доцільним видається закріплення в законодавстві України «широкої» дефініції поняття електронних доказів, яка б фіксувала лише найбільш загальні, сутнісні ознаки цього явища. Узагальнене формулювання гарантувало б можливість віднесення до електронних доказів будь-яких цифрових даних на будь-якому електронному носії, що існує сьогодні чи може з'явитися у майбутньому [10, с. 22].

Звідси буквальне тлумачення положень закону приводить до висновку, що електронні документи, які не посвідченні електронним цифровим підписом, можуть вважатись електронними документами, однак не будуть вважатись оригіналами таких документів в розумінні цього Закону, що є очевидно суперечливим. Незрозумілість виникає також після аналізу ч. 2 ст. 6 згадуваного Закону, згідно з якою саме накладанням електронного підпису завершується створення електронного документа.

Як вірно зауважує, зокрема, І. Г. Медведєв, автори Закону не зазначили додаткових вимог до такого документа, зокрема, зважаючи на відсутність подібних вимог до звичайних письмових документів на паперовому носії. Наприклад, очевидно, що при поданні письмових доказів суд не вимагає сторону довести, що його підписала саме та особа, яка в ньому зазначається, що зміст документа є цілісним, його не було змінено чи спотворено. Натомість до електронних доказів ця вимога застосовується (а саме: необхідність посвідчення електронних доказів електронним цифровим підписом.

Проблема полягає в тому, що створення електронного підпису достатньо затратна по часу процедура, для того, щоб створити такий підпис особа має звернутися до надавача електронних довірчих послуг, які створюють електронний підпис, цей підпис обмежений у часі, а також ці послуги є платними, крім того для отримання даного підпису необхідна особиста присутність підписанта, малодоступне явище, а отже якщо доказова база безпосередньо ґрунтується на електронних доказах, то особа яка не має електронного підпису формально позбавляється права доказування. Тому, ми вважаємо, що ефективнішим було б розширити повноваження нотаріусів у цій сфері, оскільки саме до їх компетенції належить завірення документів і саме вони могли б здійснювати дії пов'язані із засвідченням вірності електронних документів, це б спростило подання доказів у суд. Також досить проблематичним є питання розмежовування оригіналу та копії електронного документа. Відповідно до статті 7 Закону України «Про електронні документи і електронний документообіг» оригіналом електронного документа вважається електронний примірник документа з обов'язковими реквізитами, у тому числі з електронним підписом автора або підписом, прирівняним до власноручного підпису відповідно до Закону України "Про електронні довірчі послуги".У разі надсилання електронного документа кільком адресатам або його зберігання на кількох електронних носіях інформації кожний з електронних примірників вважається оригіналом електронного документа. У ст. 6 Закону України "Про електронні документи та електронний документообіг" передбачається можливість застосування електронного підпису для ідентифікації автора документа, однак ця вимога не є обов'язковою.

Звідси буквальне тлумачення положень закону приводить до висновку, що електронні документи, які не посвідченні електронним підписом, можуть вважатись електронними документами, однак не будуть вважатись оригіналами таких документів в розумінні цього Закону, що є очевидно суперечливим. Незрозумілість виникає також після аналізу ч. 2 ст. 6 згадуваного Закону, згідно з якою саме накладанням електронного підпису завершується створення електронного документа. На мою думку, слід керуватись ст. 7 цього Закону та вважати наявність електронного підпису необов'язковою вимогою для електронних документів з метою можливості їх використання в судовому процесі у

якості належних та допустимих доказів. Посвідчення електронним підписом електронних документів (крім текстового документа) є досить складною процедурою, якою не володіють навіть більшість професіоналів-програмістів. До того ж законодавством не передбачається навіть процедура перевірки електронного цифрового підпису судами при поданні електронних доказів. Як наслідок, ставиться під сумнів доцільність закріплення такої занадто ускладненої процедури подання до суду цього засобу доказування.

Так, порядок оформлення, подання та дослідження електронних доказів на законодавчому рівні досі не врегульовано. Тому в судовій практиці з цього приводу часто виникають непорозуміння. Відповідно до ст. 8 Закону України «Про електронні документи та електронний документообіг» від 22.05.2003 р. №851-IV, юридична сила електронного документа не може бути заперечена виключно через те, що він має електронну форму. Водночас неналежне оформлення електронних доказів нерідко було підставою для їх відхилення судом.

Розглянувши практику Великої Палати Верховного Суду слід зазначити,що 14.02.2019 р. Велика Палата Верховного Суду, переглядаючи справу №9901/43/19 (П/9901/43/19), ухвалила, що саме електронний цифровий підпис є головним реквізитом такої форми подання електронного доказу. Відсутність такого реквізиту в електронному документі виключає підстави вважати його оригінальним, а отже, належним доказом у справі.

Аналогічна правова позиція була висловлена Верховним Судом у постанові від 19.12.2018 р. у справі №226/1204/18, від 04.12.2018 р. у справі №2340/3060/18, від 23.11.2018 р. у справі №813/1368/18, від 14.12.2018 р. у справі №804/3580/18. Отже, як оригінал, так і копія електронного документа обов'язково мають бути засвідченні електронним цифровим підписом.

Водночас доцільність цього реквізиту для оформлення електронних доказів є достатньо сумнівною, оскільки наразі суди не володіють технічною можливістю дослідити та перевірити електронний цифровий підпис на предмет його достовірності. Зокрема, Ухвалою від 04.03.2019 р. у справі №404/4623/15-а (8а/404/1/18) Верховний Суд постановив, що електронні докази були подані з використанням електроного цифрового підпису, проте відхилив такі документи, посилаючись на те, що Єдина судова інформаційно-телекомунікаційна система не розпочала роботу, що унеможливлює прийняття документів в електронній формі без наявності власноручного підпису скаржника.

Однак іноді у судів виникають проблеми з ідентифікацією особи, яка створює ту чи іншу публікацію в соцмережах. Як реально можна ідентифікувати особу, яка створила або поширила негативну інформацію в інтернеті. Очевидно, що в соцмережі Facebook може зареєструватися будь-яка особа та під будь-яким іменем, та за будь яким номером телефону. Телефонні номери(якщо це номер не є контрактним) можна придбати будь в якій торговій

мережі, при цьому не потрібно паспортні данні, які містять дані про особу. Отже, можна створити та підтримувати сторінку від імені відповідача (зокрема, шляхом розміщення інформації та фотознімків).

Так можна змоделювати ситуацію, особа подає позов про відшкодування шкоди завданої неякісним виконанням послуг, і на підтвердження того, що в неї виникли договірні зобов'язання додає переписку з особою до якої позивається, відповідач ж зазначає, що це взагалі не він, і даний номер не належить йому. Суд в даному випадку не візьме до уваги цей доказ,отже його не можна вважати, як належний електронний доказ.

Але, нерідко як доказ сторони посилаються на інформацію із соціальних мереж опонента. Як правило, суди охоче використовують такі докази. Приміром, негативні висловлювання у Twitter стали підставою для рішення про відмову у визнанні позивача біженцем або особою, яка потребує додаткового захисту (Постанова Шостого апеляційного адміністративного суду від 19.03.2019 р. у справі №826/18174/16). В ухвалі Апеляційного суду м. Києва у справі №757/16817/16 від 17.05.2017 р., спростовуючи доводи відповідача про його скрутне майнове становище, суд послався на роздруківку з його соціальної мережі, з якої вбачається, що відповідач багато подорожує.

Для врегулювання подібних ситуації, потрібно на законодавчому рівні закріпити положення, яке буде закріплювати, що для реєстрації в будь-яких соціальних мережах необхідно підтверджувати особу, тобто надавати документи, що підтверджують особу або створити реєстр мобільних номерів, де також буде підтверджено факт належності конкретного номера конкретній особі.

У таких випадках суди, як правило, залучають Консорціум «Український центр підтримки номерів та адрес». Функції Консорціуму полягають у проведення фіксації та дослідження змісту веб-сторінок у мережі Інтернет з видачею експертних висновків, а також видачі довідок з відомостями про власників веб-сайтів або інформацію про їх встановлення. Компетенція консорціуму підтверджуються Свідоцтвом про акредитацію, виданим 22.11.2017 р. ОП «Український мережевий інформаційний центр», який відповідно до розпорядження Кабінету Міністрів України від 22.07.2003 р. №447-р «Про адміністрування домену «.UA» та ст. 56 Закону України «Про телекомунікації» уповноважено здійснювати адміністрування адресного простору українського сегмента мережі Інтернет.

Висновок. Підсумовуючи можна зазначити, що питання електронних доказів, потребують регламентації законодавця, необхідно спростити процедуру отримання електронного підпису, регламентувати порядок засвідчення електронних документів, встановити на законодавчому рівні, що можна вважати копію, а що оригіналом, змінити порядок забезпечення електронних доказів. Звичайно система електронних документів значно спрощує їх

доступність, дає можливість захисту особі своїх інтересів при виникненні будь-яких відносин в мережі. Питання електронних доказів, на нашу думку, буде лише зміцнюватися і все більше закріплюватися в судовій системі. Оскільки прогрес не стоїть на місці, існує велика ймовірність, що вже найближчим часом вітчизняне судочинство повністю перейде на електронне доказування, що передбачає абсолютну відмову від особистого спілкування між учасниками процесу і між суддею та учасниками судової справи, що, у свою чергу, призведе до необхідності перегляду сутності та змісту багатьох засад і принципів судового провадження, насамперед принципу безпосередності судового розгляду.

Слід зазначити, на наш погляд, електронним доказом є інформація, зафіксована на електронному носієві, що має необхідні реквізити, які дозволяють його ідентифікувати та використати у відповідному судовому провадженні, оскільки вона може спростувати або підтвердити факти, котрі мають значення для вирішення судової справи по суті. Електронний документ виступатиме письмовим засобом доказування тією ж мірою, що і паперовий документ, якщо доказове значення матимуть зафіксовані на ньому думки або факти. Водночас вважаємо, що, оскільки судова практика надалі залишається неоднозначною у вирішенні питання, які саме електронні докази (у якій формі, на якому носієві тощо) вважати допустимими засобами доказування, законодавцю слід невідкладно усунути ці протиріччя шляхом внесення відповідних уточнень до чинного процесуального законодавства нашої держави.

Таким чином, очевидною вбачається необхідність внесення змін до процесуального законодавства в питанні спрощення процедур подання та дослідження електронних доказів. Існування чинної процедури, яка незавжди реально може бути застосована, рано чи пізно призведе ло колапсу. Вирішенням цього питання може бути напрацювання судової практики Верховним Судом, однак, оскільки питання дослідження доказів не відноситься до їх компетенції, то можливість вирішення проблеми таким шляхом є сумнівною. Як наслідок, єдиним виходом із ситуації є ініціювання процедури законодавчих змін, що стосуються електронних доказів в судовому процесі.

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ПРОФЕСІЙНА ПРАВОВА КУЛЬТУРА ПРАВНИКІВ ЯК ЧИННИК ЄВРОПЕЙСЬКОЇ ІНТЕГРАЦІЇ УКРАЇНИ

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PROFESSIONAL LEGAL CULTURE OF LAWYERS AS A FACTOR OF UKRAINE'S EUROPEAN INTEGRATION

Анотація.

У статті досліджується роль професійної правової культури суддів, прокурорів та адвокатів у контексті євроінтеграційних процесів України. Автором обґрунтовано, що гармонізація законодавства з нормами ЄС є недостатньою без фундаментальної трансформації правової ментальності правничої спільноти. Висвітлено проблему переходу від радянського правового позитивізму (легізму) до європейського стандарту верховенства права (Rule of Law), де пріоритетом є «дух закону» та права людини, а не формальний припис.

Особлива увага приділена категорії «доброчесність» (integrity) як обов'язковому юридичному стандарту та інструменту відновлення суспільної довіри до системи правосуддя. Розглянуто впровадження принципу пропорційності та людиноцентризму як антиподу державоцентричному підходу. Зроблено висновок, що професійна культура правників виступає «м'якою силою» реформ, а опанування практики ЄСПЛ та Суду справедливості ЄС є необхідною умовою формування нової правничої еліти України.

Abstract
Title: Professional Legal Culture of Lawyers as a Factor of Ukraine's European Integration.

The article examines the role of the professional legal culture of judges, prosecutors, and lawyers within the context of Ukraine's European integration processes. The author argues that the harmonization of legislation with EU norms is insufficient without a fundamental transformation of the legal mentality of the judicial community. The study highlights the challenge of transitioning from Soviet legal positivism (legism) to the European standard of the Rule of Law, where the priority is the "spirit of the law" and human rights rather than formal regulations.

Special attention is paid to the category of "integrity" as a mandatory legal standard and a tool for restoring public trust in the justice system. The implementation of the principles of proportionality and human-centeredness as an antidote to the state-centered approach is analyzed. It is concluded that the professional culture of lawyers acts as a "soft power" of reforms, and mastering the jurisprudence of the ECHR and the Court of Justice of the EU is a prerequisite for the formation of a new legal elite in Ukraine.

Ключові слова: *професійна правова культура, європейська інтеграція, верховенство права, доброчесність, правовий менталітет, легізм, людиноцентризм, правосуддя.*

Keywords: *professional legal culture, European integration, Rule of Law, integrity, legal mentality, legism, human-centeredness, justice.*

Постановка проблеми. Процес повноправної інтеграції України до європейського правового простору традиційно розглядається крізь призму «нормативної адаптації» – приведення національного законодавства у відповідність до acquis communautaire (права ЄС). Однак практика реформ останнього десятиліття засвідчила, що формальне запозичення найдосконаліших європейських інституцій та регламентів не дає очікуваного ефекту, якщо вони імплементуються в середовище зі сталою архаїчною правовою культурою.

Головна проблема полягає в глибокому ціннісному розриві між європейським стандартом правосуддя та успадкованим від радянської системи правовим позитивізмом (легізмом). Для української правничої спільноти (суддів, проку-

рорів, адвокатів) протягом тривалого часу домінуючою залишалася культура «букви закону», де закон ототожнювався з волею держави, а не зі справедливістю. Це призвело до формування специфічного правового менталітету, що характеризується: а) надмірним формалізмом; б) пріоритетом інтересів державного апарату над правами людини; в) низьким рівнем персональної етичної відповідальності (до чесності).

В умовах євроінтеграції професійна правова культура правників перестає бути лише внутрішньо-корпоративним питанням. Вона стає стратегічним чинником національної безпеки та довіри, оскільки саме через правосвідомість юриста здійснюється реальний перехід від декларативного верховенства права до практичного людино-цен-

тризму. Без трансформації цієї культури – від «інструмента влади» до «служителя правосуддя» – вступ до ЄС ризикує залишитися лише на рівні юридичної фікції, не забезпечивши реального захисту прав громадян та інтересів інвесторів.

Процес європейської інтеграції України висуває принципово нові вимоги до професійної культури правничої спільноти. Сьогодні мова йде не лише про гармонізацію законодавства з нормами ЄС, а про набагато складніший процес – трансформацію правової ментальності суддів, прокурорів та адвокатів. Професійна правова культура в цьому контексті виступає як «м'яка сила», що визначає реальну дієвість реформ. Адже навіть найдосконаліші закони, запозичені з європейської практики, не працюватимуть, якщо вони стикаються з архаїчною культурою формалізму та корупційної толерантності.

Ключовим елементом цієї трансформації є впровадження стандарту доброчесності. В європейській традиції правник є «служителем правосуддя», чия репутація та етична поведінка є невід'ємними від його професійних знань. Для України це означає перехід від закритої корпоративної етики до відкритої, людино-центричної моделі. Євроінтеграційний вектор вимагає від українських правників опанування мистецтва юридичної аргументації на основі принципів верховенства права та пропорційності, що є фундаментом правопорядку Європейського Союзу. Проблема радянського правового позитивізму (Легізму), полягає в тому, що в соціалістичній системі права (радянській традиції) закон сприймався як воля держави, обов'язкова до виконання, незалежно від того, чи є вона справедливою. Це породило культуру формалізму: «є папірець – є право, немає папірця – немає права». Отже, як наслідком для культури, правник стає інструментом державної машини, а не захисником людини. Це призводить до ситуацій, коли судове рішення «законне», але абсолютно «несправедливе».

Останнім часом видатну роль відводиться Європейським стандартам, тобто Верховенство права (Rule of Law). В ЄС закон — це лише оболонка, а всередині — цінності: справедливість, рівність, гуманізм. Якщо буква закону суперечить правам людини, правник має пріоритезувати права людини. Проте, впровадження принципу пропорційності. Чи є втручання держави у права особи необхідним і чи не є воно надмірним? Це вимагає від судді чи прокурора не просто цитувати статтю, а здійснювати глибокий аналіз цінностей.

В сучасну епоху настає нова Доба – людиноцентризм проти державоцентризму. Тобто зміна пріоритетів, де професійна культура має базуватися на аксіомі: *не людина для держави, а держава для людини*. Правник відіграє головну роль: суддя, адвокат і прокурор стають «фільтрами», які не пропускають сваволя влади. В статті варто наголосити, що європейська інтеграція – це коли чиновник боїться порушити право людини більше, ніж порушити внутрішню інструкцію.

Європейська культура дає правнику більше свободи у тлумаченні норм. Але ця свобода — не для самоправства, а для пошуку найбільш справедливого рішення в конкретній ситуації.

Постає проблема: як навчити українських правників не боятися брати на себе відповідальність за «сміливі» рішення, що базуються на практиці ЄСПЛ, навіть якщо вони йдуть врозріз із застарілими кодексами.

В ЄС «доброчесність» (integrity) — це не просто гарне слово, а юридична вимога. Стаття має дослідити, як оновлення етичних кодексів та кваліфікаційне оцінювання суддів змінює внутрішню культуру правничої спільноти.

Правник у контексті євроінтеграції має володіти не лише англійською мовою, а й «мовою цінностей». Це використання практики ЄСПЛ та Суду справедливості ЄС як повсякденного інструмента, а не екзотичного додатка до позову.

Висновки.

На основі проведеного дослідження можна сформулювати наступні підсумкові положення:

1. Трансформація від «легізму» до «юс» (правосуддя). Головним бар'єром на шляху до ЄС є не відсутність законів, а рудименти радянського правового позитивізму. Професійна культура правника має еволюціонувати від механічного виконання «букви» закону до глибокого розуміння його «духу». Це означає, що справедливість стає вищою за формальний припис, а принцип верховенства права — безальтернативним орієнтиром.

2. Доброчесність (Integrity) як нова правова реальність. Доброчесність перестає бути абстрактною моральною категорією і перетворюється на жорстку кваліфікаційну вимогу. Для європейської інтеграції критично важливо, щоб етична поведінка суддів, прокурорів та адвокатів була не наслідком зовнішнього контролю, а результатом внутрішнього професійного переконання. Тільки через «очищення» правничої спільноти можливе відновлення суспільної довіри до системи правосуддя.

3. Людиноцентризм як антидот свавіллю. Європейська інтеграція вимагає зміни вектора: правник має стати «фільтром» проти державного свавілля. Впровадження принципу пропорційності та пріоритет прав людини над інтересами державного апарату — це ті лакмусові папірці, за якими партнери з ЄС оцінюватимуть успіх українських реформ. Сучасний правник — це не гвинтик системи, а автономний гарант прав особи.

4. Інтелектуальна конвергенція з правовим простором ЄС. Професійна культура майбутнього передбачає вільне володіння «мовою цінностей» Європи. Практика ЄСПЛ та Суду справедливості ЄС має стати повсякденним робочим інструментом, а не винятком. Це вимагає радикального перегляду системи правничої освіти та постійного професійного розвитку.

Євроінтеграція України – це передусім антропологічний виклик. Успіх реформ залежить не від кількості прийнятих актів, а від формування нової правової еліти, для якої європейські стандарти є органічною частиною професійної ідентичності.

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PHILOLOGICAL SCIENCES

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ARABSKIE KASIDY FUZULIEGO

Abstract.

Muhammed bin Suleyman Fuzūlī (d. ca. 1556) composed qaṣīdas in Turkish, Persian, and Arabic. While his Turkish and Persian qaṣīdas are widely studied, his Arabic qaṣīdas have received relatively little scholarly attention. This article examines the twelve Arabic qaṣīdas (eleven complete, one fragment, totaling 465 bayts/couplets), discussing their textual transmission, poetic structure, and thematic content. The study showcases Fuzūlī's proficiency in Arabic metres, rhetorical techniques, and semantic intricacies. His qaṣīdas reflect Sufi thought and Shiʿite devotion, particularly to the Prophet Muhammad (ﷺ) and Imam ʿAli (ع), as well as lyrical explorations of earthly love. The study contextualises Fuzūlī's Arabic qaṣīdas within his trilingual poetic heritage, emphasising their integral role in appreciating the poet's artistic and spiritual achievements. Consequently, these qaṣīdas should be studied alongside his Turkish and Persian poetry to gain a comprehensive understanding of Fuzūlī's poetic genius and his contributions to the literary traditions of the Islamic world. The article also touches upon the poet's date of birth, which appears differently in various sources. Based on the date on a manuscript obtained from the National Library of France (BnF), it emphasises the importance of revising this date.

Streszczenie.

Muhammad ibn Sulejman Fuzūlī (zm. ok. 1556) tworzył kasydy w językach tureckim, perskim oraz arabskim. Podczas gdy jego kasydy tureckie i perskie są szeroko badane, kasydy arabskie pozostają stosunkowo słabo opracowane w literaturze naukowej. Niniejszy artykuł analizuje dwanaście arabskich kasyd (jedenaście zachowanych w całości oraz jeden fragment, łącznie 465 bajtów/dwuwierszy), omawiając ich przekaz tekstowy, strukturę poetycką oraz treść tematyczną.

Badanie ukazuje biegłość Fuzūliego w zakresie arabskich metrów poetyckich, technik retorycznych oraz subtelności semantycznych. Jego kasydy odzwierciedlają myśl suficką oraz szyicką pobożność, zwłaszcza wobec Proroka Muhammada (□) oraz imama ʿAliego (□), a także zawierają liryczne refleksje nad miłością ziemską.

Artykuł umieszcza arabskie kasydy Fuzūliego w kontekście jego trójjęzycznego dziedzictwa poetyckiego, podkreślając ich integralną rolę w pełnym zrozumieniu artystycznych i duchowych osiągnięć poety. W związku z tym kasydy te powinny być badane równolegle z jego twórczością turecką i perską, aby uzyskać całościowe spojrzenie na geniusz poetycki Fuzūliego oraz jego wkład w tradycje literackie świata islamu.

Artykuł porusza również kwestię daty urodzenia poety, która w różnych źródłach podawana jest odmiennie. Na podstawie daty znajdującej się w rękopisie przechowywanym w Bibliotece Narodowej Francji (BnF) podkreśla się konieczność rewizji tej daty.

Keywords: Fuzūlī, Arabic Poetry, Gaṣīda, Bertels, Bandaroghlu.
Słowa kluczowe: Fuzūlī, poezja arabska, kasida, Bertels, Bandaroghlu.

Introduction: Muhammed bin Suleyman Fuzūlī (d. ca. 1556) is recognized as one of the most prominent poets of the classical Azerbaijani literature, composing in Turkish, Persian, and Arabic. A scotish orientalist E. J. W. Gibb (1857-1901) characterized Fuzuli's trilingual creativity as follows: "*He composed with equal ease and elegance in Turkish, Persian, and Arabic, his Turkish poems being highly favoured by the critics of Rūm, his Persian dīvān being the delight of the poets of every land, his Turkī pieces being recited by the Mughals, and his Arabic bayts being famous with the eloquent among the Arabs*" (Gibb, 1904, p.72)

Although his Turkish and Persian works have been extensively studied, his Arabic qaṣīdas have received comparatively little scholarly attention, despite being important for understanding Fuzūlī's literary and spiritual development. These qaṣīdas were discovered by chance in a manuscript at the Asia Museum (now the Institute of Oriental Manuscripts) and were first studied by the Russian scholar Evgenii Eduardovich Bertels. In 1930, he published preliminary information on these qaṣīdas and prepared critical editions of two of them (the qaṣīdas No. 1 and No. 6 in the Dīvān), translating them into Russian in the process (Bertels, 1930, pp. 39–71).

These texts have become more accessible thanks to subsequent critical editions by Hamid Arasli in 1958 (Baku) and Abdul Latif Bandaroglu in 1994 (Baghdad).

Alongside these publications, research into Arabic qaṣīdas also began. One of the scholars who has conducted noteworthy research on Fuzūlī's qaṣīdas is Vejihe Feyzullayeva. While examining the poet's qaṣīda production as a whole, she also addressed those composed in Arabic. In 2012, Ruhengiz Jumshudlu became the first researcher to conduct an extensive, independent, scholarly study of these Arabic qaṣīdas.

Although various sources in Türkiye mention Fuzuli's Arabic works, they have not yet been the subject of a systematic and extensive investigation. Nevertheless, Ayhan Erdoghan translated and analysed two qaṣīdas (the qaṣīdas No. 4 and No. 11 in the Dīvān) (Erdoghan, 2010, pp. 171–181).

This study provides a succinct analysis of Fuzūlī's Arabic qaṣīdas, covering their textual history, poetic form, thematic content, and linguistic features. Through an examination of these qaṣīdas, the article will seek to reconstruct the poet's multilingual literary vision, while also highlighting the spiritual and aesthetic significance of his Arabic poetry.

Main Text: Several scholars argue that Fuzūlī possessed a complete Arabic Dīvān, and the surviving qaṣīdas represent fragments of that collection. For instance, Hamid Arasli asserts that, besides the qaṣīdas known to contemporary scholarship – many still unpublished – Fuzūlī composed a separate Arabic Dīvān (Arasli, 1958, p. 141). Similarly, Abdulkadir Karahan indicates that the extant Arabic qaṣīdas, though limited in number, are excerpts from this Dīvān; medieval sources such as Ṣādiqī and Bursali Mehmed Tahir also corroborate the existence of Fuzūlī's Arabic Dīvān, sometimes exaggerating its extent to 30,000 (3000 [?]) bayts (Karahan, 2020, p. 245).

Motivated by these claims, we surveyed the manuscript catalogues of major libraries worldwide in an attempt to locate Fuzūlī's Arabic works. Although this search did not yield any new qaṣīdas, we found a manuscript in the *Bibliothèque Nationale de France* that contains four Arabic bayts attributed to Fuzūlī (cote: Persan 49; former catalogue numbers: 1675, O.13, 1682 and 1548). A comparison with editions by Arasli and Bandaroghlu shows that these four bayts correspond to couplets 11–14 of the second qaṣīda.

Although the manuscript does not provide substantial new information on Fuzūlī's Arabic qaṣīdas, it contains data relevant to his birth date, which remains a matter of debate. While scholars such as Alessio Bombaci (Aliyeva, 2025, p. 1058), and Hasibe Mazioglu (Mazioglu, 2002, p. 2) propose 1480; A. Karahan (Karahan, 1989, p. 72), and Bandaroglu (Bandaroglu, 1994, p. 5) suggest 1494 – a date also adopted by the "Azerbaijan Literary History" and *Bibliotheque Nationale de France*.

According to Edgar Blochet (1870–1937), the manuscript was copied in 894 AH (1488 AD) by Dervish Yusuf ibn Ahmad ibn Muhammad al-Khorasani al-Isfahani (Blochet, 1905, p. 86). This implies that Fuzūlī may have been born before 1480, a possibility and that should be given careful consideration in future biographical studies.

Scholars are familiar with twelve of Fuzūlī's Arabic qaṣīdas (eleven complete and one fragment), totalling 465 bayts. Various researchers have documented the distribution of bayts among the qaṣīdas differently: Y. E. Bertels numbered the qaṣīdas and recorded the number of bayts in each: No. 1 – 63, No. 2 – 51, No. 3 – 43, No. 4 – 21, No. 5 – 30, No. 6 – 38, No. 7 – 27, No. 8 – 27, No. 9 – 53, No. 10 – 52, No. 11 – 53, and No. 12 (fragment) – 7 couplets (Bertels, 1962, p. 507).

Fuad Koprulu repeated Bertels's enumeration, whereas A. Karahan reported a total of 470 bayts. Other scholars, such as V. Feyzullayeva and R. Jumshudlu, suggested totals of 465 (Feyzullayeva, 1985, p. 22) and 460 (Jumshudlu, 2012, p. 13), respectively.

Ayhan Erdogan's view, however, is entirely different. He states*: "The divan, consisting of a total of 516 couplets, comprises 12 qaṣīdas together with the final 7-couplet khātima. The lengths of the qaṣīdas also vary. Listed in order, the number of couplets in the qaṣīdas is as follows: 114–51–44–21–30–38–27–27–53–52–52–7 = 516 bayts"* (Erdoghan. 2010, p. 172).

However, the accuracy of the figures presented by Erdoghan is open to doubt. This is because in the editions of Fuzūlī's Arabic works prepared by both Arasli and Bandaroghlu, there is no Arabic qaṣīda consisting of 114 couplets. In both editions, the first and longest qaṣīda comprises 63 couplets.

Our comparative analysis of the number of couplets in the qaṣīdas shows that the figures in the editions prepared by Arasli and Bandaroghlu fully coincide, and that these figures are identical to those provided by Bertels, with the exception of two qaṣīdas. Bertels counted one couplet fewer in the third qaṣīda and one couplet more in the eleventh qaṣīda. In fact, the third qaṣīda consists of 44 couplets, while the eleventh qaṣīda consists of 52 couplets.

Taking these corrections into account, the number of couplets in Fuzūlī's Arabic qaṣīdas can be presented as follows:

No. 1 – 63, No. 2 – 51, No. 3 – 44, No. 4 – 21, No. 5 – 30, No. 6 – 38, No. 7 – 27, No. 8 – 27, No. 9 – 53, No. 10 – 52, No. 11 – 52, and No. 12 – 7 couplets.

Thus, the total number of couplets in the qaṣīdas amounts to 465.

Eight of Fuzuli's Arabic-language qasidas (nos. 1, 2, 6, 7, 9, 10, 11 and 12) are written in the *ṭawīl* metre; three (nos. 3, 4 and 5) in *kāmil*; and one qasida (no. 8) in *wāfir* (Bertels, 1962, p. 508). These metres of ʿarūḍ were considered to be more characteristic of Arabic poetry. M. F. Koprulu notes that non-Arab (ʿAjam) poets made very limited use of metres widely known among Arabs, such as *tawīl, madīd, basīṭ, wāfir*, and *kāmil* (Koprulu, 1980, p. 134).

However, Fuzūlī did not use metres typical of Turkish and Persian poetry, such as *muḍāriʿ* and *mujtass*, but instead favoured those commonly used by Arabic poets. Bertels explains this preference in two ways:

1) Fuzuli perceived the rhythm of Arabic poetry more clearly in these metres and sought to give his qaṣīdas an Arabic 'character' by using them;

2) These heavy metres were more suited to the solemn and ceremonial style of the qasida, leading him to favour them (Bertels, 1962, p. 508).

However, given that another one of our classical poets, Khagani Shirvani, who is considered a master of the qasida, also wrote in Persian using metres such as *madīd, ṭawīl, basīṭ, wāfir* and *kāmil*, which are considered "uncharacteristic of Persian poetry" Bertels's second argument seems more convincing. In other words, Fuzūlī did not attempt to impart an artificial Arabic character to his works; rather, he favoured the metres that were most appropriate to the genre of the works he was composing.

The lack of diacritical marks, and vowels (ḥarakāt) in classic Arabic texts is one of the factors that complicates the translation process and leads to distortion. It is worth mentioning a thought about the Arabic alphabet by Abū Rayḥān al-Bīrūnī (973-1048), one of the famous scholars of the Middle Ages: "*Arabic writing has a great drawback. It contains letters identical in their forms. They are easily confused, and there results the need for diacritical marks to distinguish those letters from each other, as well as the need for ways and means to express the grammatical terminations at the ends of words. Where these marks are omitted, the meaning becomes obscured*" (Rosenthal, 1961, p. 22). When religious texts are composed, potentially contradictory points are carefully taken into consideration, and in order to prevent misinterpretation or distortion, such passages are provided with diacritical marks, and vowels; in other cases, the texts are generally presented without them. This situation may result in multiple readings of a single word and, consequently, in different translation variants. This also applies to Fuzūlī's works.

As we mentioned earlier that Fuzūlī's Arabic qaṣīdas were published by H. Arasli and A. L. Bandaroghlu, though both editions contain certain inaccuracies. This explains why different translators interpret certain bayts differently, for example, in the case of Qaṣīda No. 10, bayt No. 15:

لسانك حلو لحظ طرفك ساحر كأنّك حلي و أرضك بابل

(Bandaroghlu, 1994, p. 113)

Koprulu interpreted the part of the bayt كأنّك حلي و أرضك بابل *as if you were from Hillah and your land was Babylon*, and concluded that Fuzūlī was born in Hillah and spent most of his life there. However, A. Karahan and A. Golpinarli rightly objected to this idea.

Azerbaijani scholars have also translated the couplet in various ways. Memmed Mubariz Alizadeh, for example, produced the following poetic translation of the bayt:

Your tongue is sweet, those meaningful eyes enchanting,

Has your homeland become Babylon to you, are you a sweetmaker?

(Fuzūlī, 2005, p. 302)

V. Feyzullayeva did not consider this translation to be accurate, and made the following suggestion:

Your tongue is sweet, your crooked gaze is enchanting,

You seem like Hillah, and your land is Babylon.

(Feyzullayeva, 1985, p. 41)

However, translating the phrase لحظ طرفك in the first line as *crooked gaze* is inappropriate both grammatically and semantically. This is because the phrase is in the *iḍāfah construction* (noun + noun) structure in Arabic, whereas *crooked gaze* is a noun + adjective phrase. Moreover, the phrase *crooked gaze* is also semantically incompatible with the description *sweet-tongued, captivatingly beautiful*. The correct meaning of the phrase is as follows: لحظ *glance*, طرفك *your eyes* → *the glance of your eyes*.

The researcher rightly points out that translating the word حلي as *sweetmaker* in the second line distorts the meaning, and his proposed alternative translation is open to debate. This is because, in Arabic, the absence of a *tashdid*, (or *shaddah*) can completely change the meaning of a word. Depending on the placement of the *tashdid* in this couplet, the word حلي can be read in two ways:

1. حِلِّيٌّ (hillî) – if there is a tashdid on both the letter *lâm* and the letter *yâ*.

This form is consistent with the edition by Bandaroglu. Researchers such as Bertels (Bertels, 1962, p. 515), Feyzullayeva (Feyzullayeva, 1985, p. 41), and Jumshudlu (Jumshudlu, 2012, p. 188) have preferred this reading.

2. حُلِيٌّ (jewellery, adornment) – only if there is a *shaddah* on the letter *yā'*.

In Araslı's edition, the couplet is written this way. A. Erdoghan, who translated Fuzûlî's two Arabic qasidas, adopted this reading:

Your tongue is sweet, even a single glance is enchanting.

You are like a jewel, and the place you live is Babylon.

(Erdoghan, 2010, p. 177)

The city of Babylon, mentioned in the couplet, is famous for its association with the magic of ancient Mesopotamia. The Qur'ān (Sūrah al-Baqara, āyah 102) also refers to Babylon's association with magic. The motif of *Babylonian magic* features prominently in Eastern literature. In my estimation, Fuzūlī also compares the beloved's gaze to Babylonian magic and has expressed that the sweet-tongued, enchanting beauty is likened to a precious jewel found in the legendary Babylon:

Your tongue is sweet, your gaze enchanting; you are like a precious jewel, and your dwelling place is Babylon.

Despite their limited volume, the poet's Arabic works are rich in rhetorical devices, such as *istiʿārah* (metaphor), *tashbīh* (simile), *jinās* (paronomasia), *tibāq* (antithesis), among others. According to early studies on Fuzūlī, *ishtiqāq* (derivational wordplay) is the most frequently employed rhetorical device in his Arabic qaṣīdas (Bertels, 1962, p. 511; Jumshudlu, 2012, p. 177). Fuzūlī made extensive use in his works of words derived from the same root yet conveying mutually contradictory meanings. The poet's pseudonym represents the most striking example of this practice. In its first sense, the word *fuẓūlī* denotes a person of knowledge and virtue, while in its second sense it refers to someone who speaks vainly or engages in idle talk. In the preface to his Persian Divan, the poet explicitly

states that he adopted the pen name Fuzūlī precisely because of this dual meaning. One of his Arabic couplets also alludes directly to this issue:

عُلُوُّ مَقَامِي فِي الفَضَائِلِ ظَاهِرٌ مُشِيعُ اسْمِي بِالفُضُولِ لَقَدْ سَها

(Bandaroghlu, 1994, p. 73)

My excellence in virtue is manifest;
Those who circulate my name under idle talk
(fudūl) have erred.

Another example: the poet, employing words derived from the same root فرط, yet expressing completely opposite meanings – *tafrīṭ* (neglect) and *ifrāṭ* (excess), says:

قَلبِي بِتَفْرِيطِ المُنى مُتكسِّر جسمي بِافْرَاطِ السُقام نحيل

(Bandaroghlu, 1994, p. 91)

My heart is broken by neglect of desire;
My body, weakened by excess of affliction.

Fuzuli's couplet reflects the influence of Qur'ānic verses (Sūrah al-Furqān, āyah 67; Sūrah al-Isrā āyahs 29 and 110) and resonates with the wisdom of خَيْرُ الأُمُور أَوْسَطُهَا، لَا إِفْرَاطَ وَ لَا تَفْرِيطَ — *The best of deeds is the moderate one; avoid both excess and negligence.*

Fuzūlī's Arabic qaṣīdas are not merely literary compositions; they also serve as poetic reflections of Islamic thought, Sufism, and devotion to the Ahl al-Bayt. Across the qaṣīdas, one encounters both worldly themes and spiritual, mystical sentiments. Some bayts express love for the Prophet Muhammad (ﷺ) and ʿAlī ibn Abī Ṭālib (ع), while others depict pure affection for an earthly beloved, with its attendant suffering and longing. Proper interpretation of these bayts often requires reference to the Qur'ān, authentic Hadith, and exegesis.

The poet's devotion to Shiʿism and to Imam ʿAlī (ع) is evident throughout his work. In bayts that praise Imam ʿAlī (ع), Fuzūlī demonstrates a meticulous adherence to religious sources, portraying the Imam's exalted status with profound erudition. Consider the eleventh qaṣīda, dedicated him:

وَلِيٌّ وصِيٌّ كامل متكمّل تقيٌّ نقيٌّ زاهد متسرع
اقام بناء الدين جودا و طاعة فأعطى فقيرا خاتما وهو يركع

(Bandaroghlu, 1994, p. 120)

He is a perfect guardian and executor,
devout, pure, ascetic, and swift in acts of piety.
He established the structure of religion with generosity and obedience,
giving a ring to a poor man while in the state of ruku'.

The first bayt of the qasida praises the exalted status of Imam ʿAlī (ع). The phrase *zahid muteserri'* (the hasty ascetic) in the couplet is linked to an authentic (sahih) hadith. According to a narration from al-Bukhari: "*I used to take the "Suhur" meal with my family and hasten so as to catch the Fajr* (morning prayer) *with Allah's Messenger* (ﷺ)" (Bukhari: 577). This hadith reveals the qualities of a person who rushes to worship, possesses piety, and strives to fulfill religious obligations as quickly as possible. Fuzūlī: 's characterization of Imam ʿAlī (ع) as a "hasty ascetic" in the couplet emphasizes his meticulousness in worship and sensitivity in servitude.

The second bayt describes the generosity and philanthropy of Imam ʿAlī (ع) and recalls the Incident of Giving the Ring While in *Rukʿu* as evidence of this generosity: Imam ʿAlī (ع) gave the ring on his finger to a poor man who approached him while he was in *ruku* during prayer, without breaking his prayer. It is narrated that this led to the revelation of āyah 55 of Sūrah al-Mā'idah: *Your protector is only Allah, His Messenger, and those who believe. They are those who pray and give zakat while bowing down.*

Classical exegeses explicitly state that this āyah particularly refers to the virtue of Imam ʿAlī (ع). Fuzūlī's allusion to this event in his bayt confirms Imam ʿAlī (ع) 's high position in Islamic society.

As well as being a poet of religious devotion, Fuzūlī is also a lyrical poet. In his longest qaṣīda, the lyrical persona experiences profound emotional turmoil in pursuit of love, undergoing pain and longing while maintaining purity and virtue:

ظَواهِرُ حالِي فِي المَلامِ عَلامَةً وَلَكِنَّ حالِي فِي الضَّمِيرِ سِوَى الصَّفَا

(Bandaroghlu, 1994, p. 73)

My outward appearance indicates blame,
yet in my inner being, there is nothing but purity.

Some of the poet's couplets can be compared both to the Emevi period's platonic love-exalting *udhrî poetry* and to the Abbasid period's *afîf poetry*, which occupies an intermediate position between udhrî poetry and explicit ghazals. Such poems typically begin with complaints to Allah, accompanied by tears, anguish and sorrow, as well as feelings of longing, reunion, sorrow and joy, and complaint and contentment. These characteristics are also evident in Fuzūlī's ghazals. However, the philosophical content typical of Fuzuli's ghazals is not characteristic of Arabic ghazals, which have a simpler effect. In other words, the love conveyed in Fuzûlî's works can only be compared to that sung by poets of pure, chaste love due to its purity and innocence. Unlike Arab poets, Fuzūlī's love evolves and carries philosophical meaning.

Conclusion: Thus, the 465 surviving Arabic bayts of Fuzūlī allow modern scholars to appreciate a distinct facet of his literary genius. Fuzūlī's Arabic qaṣīdas represent a distinct and integral component of his literary corpus. Despite their relatively small number compared to his Turkish and Persian works, they demonstrate mastery of classical Arabic meters, rhetorical devices, and semantic subtleties. Reflecting both spiritual devotion to Imam ʿAlī (ع) and the Prophet Muhammad (ﷺ) and lyrical explorations of earthly love, the qaṣīdas combine Sufi and ethical reflections with the artistic rigour of classical Arabic poetry. Therefore, these qaṣīdas should be studied alongside his Turkish and Persian poetry to gain a comprehensive understanding of Fuzūlī's poetic genius and his contribution to the literary traditions of the Islamic world.

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