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## ART STUDIES

## THE PSYCHOTECHNIQUE OF THE OPERA SINGER

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DOI: [10.5281/zenodo.14546207](https://doi.org/10.5281/zenodo.14546207)**Abstract**

The article examines the specific aspects of the psycho-technique of opera singer-actors. It is pointed out that mastering the professional habits of stage creativity is necessary for the work of the opera performer to be easier and more complete due to the large number of components that should be under control simultaneously. Following all the lines of the role during performance can become a more natural process if the corresponding reflexes are acquired and consciously strengthened over a long period. Creating specialized psychophysical training is justified, and principles and goals are indicated.

**Keywords:** opera, acting, singer, psycho-technique, theatre, drama, director.

The opera in the 21st century has been greatly influenced by contemporary mass culture, especially in the area of the stage director's *interpretation*. Suppose we leave aside specific aspects and issues related to personal taste and turn to the elements of meaning and esthetics; in that case, we will quickly notice an obvious striving to escape as far as possible from *opera canon*. "Canon" in opera is at times mistakenly (evidently under the sway of emotion) perceived as something archaic, as a cliché (referring to the physical discrepancy between the performers and the characters they represent, to "dusty," sham, unnatural mannerisms, etc.) instead of as a system of inherent rules and norms that serve to stabilize the basic structural correlations between the art of music and the art of drama. Artificiality, understood as a *profanation* of opera performance, has hardly anything to do with the sort of (essentially ideal) artificiality that is the *fundamental canonic principle* of opera art, a principle that determined this art's unique power of emotional and esthetic impact upon the audience.

The possibility of interpretation of the opera canon by modern stage directing is directly related to familiarity with and recognition of the principles that determine the psycho-physical situation of the singer-actors - a situation that is proper and uniquely to their art and differs from the art of the dramatic actor. The question arises as to how to reconcile the attitude of dramatic stage direction, which primarily stresses visualization, with the predominance of music, which defines opera. The classical foundation of opera esthetics leads to very distinct ways of forming vocal-scenic skills, which is in complete contradiction with the traditional psychological notions about the presence of the dramatic actor on stage. The view that the two are the same and the mechanical understanding of the analogy between the nature of acting skills in opera and drama lead to dis-coordination between expressive devices and put the opera performer in an ambiguous situation so that he/she is forced to perform tasks not proper to him/her,

and that contradict the nature of his/her work. The aspects related to the performing skills of the opera singer, particularly the singer's training, are not linked only to *coordination between musical and acting habits*, as is assumed in modern opera pedagogy<sup>1</sup>, though this is a very complicated problem. In selecting the kind of *actor's habits* (included in the coordination system) that might determine on-stage behavior in harmony with classicist esthetics, it is precisely the latter that becomes a stable element of the canon of opera art. This is a question of applied acting skills, typical of the genre, and pointedly aimed at specific means of expression rather than a question of fundamental acting skills.

The excessive dramatization and psychological emphasis, which is a deviation from the classical esthetic norms of opera performance, is a result of Stanislavsky's influence (in Russia and other countries) on the art of opera. The patterns, fake emotions, and declamation in theatrical art, but also in opera that characterized the Italian and French companies touring Russia at that time, who were far below the high standards set by Coquelin and Diderot, motivated Stanislavsky to work in permanent opposition to this kind of acting and to create his own "system," which appealed to the emotional nature of the actor and applied to the style of 19th and 20th-century realist drama but is in contradiction with the style and principles of high tragedy and classicist drama, for which "presentation," and not "experiencing," was fundamental, and not a question of esthetic choice. Stanislavsky admired the voices of the talented Italian opera singers on tour in Russia. Yet, he rejected their on-stage helplessness, the "conventionality" of their stage behavior, and outward impressiveness, which he called "Italianshtina" ("Italian style" in the pejorative sense). Later on, he would assert that most of the patterns and stage absurdities in opera originated precisely under the influence of the Italians. Fighting against these clichés became his life's work.

What is the dividing line between the necessary scenic conventionality and the fake, imitation theatrical conventionality? These questions excited Stanislavsky

<sup>1</sup> Вж. Стародубцев, В.В. Методика обучения мастерству актера и режиссуре оперы. Автореферат; М., ГИТИС, 2011;

[http://www.gitis.net/rus/postgraduate/notices/s/starodubtsev\\_auto.shtml](http://www.gitis.net/rus/postgraduate/notices/s/starodubtsev_auto.shtml) [Starodubtsev, V. V. Methodics of Training in Acting and Opera Direction (in Russian)]

at the times when he suffered failures in the genre of tragedy. His work and creative efforts in the Opera Study, as presented in Kristi's book *Stanislavsky in Opera Theatre*, clearly indicate that in acknowledging certain qualities of the opera score that distinguish it from a dramatic text in dramatic theatre, he did not offer the singers-actors any different methods by which to master their roles, distinct from those practiced in dramatic theatre. Stanislavsky translated his "system" without any particular changes and entered into numerous contradictions with the vocal performers, which ultimately failed to produce the expected enthusiasm on the part of the young trainees. In any case, the emphasis on the dramatic was shifted, putting a long-lasting mark on the opera singer in Russia.

The view that the "dramatic element" (the actor's playing) is secondary to the "musical" element (vocal performance) is a particular problem, a reflection of the two-component structure of opera in general. It expresses the disparity between the two arts that form opera – music and drama, in the interaction of which the musical component is dominant. The construction of opera performance that has been left as a legacy of the 400 years of opera history includes the whole polyphony of esthetical and theatrical ideas, conceptual models, and particular practices. The main difference, however, runs along the dividing line between the dominance of the "musical" and the "dramatic"; hence, it is the area of prevalence of the concrete (the psychological) and the metaphoric (the abstract). I should make the provision that the present article has no intention of clarifying the key positions and concepts of the work of the opera singer-actor or deducing the strict regularities needed for the training and realization of this type of creative work; this book can only outline the possible directions and principles of synthesis. The world practice of opera pedagogy does not yet have adequate solutions that would allow the formation of a consistent training system for opera performers which fully reflects the specificity of opera. Can only give examples of mechanical translation of theatrical techniques and practices or training in the course of practice, based on observations and surmises.

As practice has shown, the opera performer can function (more or less successfully) even without having skills in acting, and world opera is full of such examples. This is because the primary means of expression of the singer-actors is their voice, vocal capacity, and technique. At the same time, dramatic acting qualities have a complementary, but not decisive, importance for the quality of their art. Asked in an interview whether he finds it more challenging to work with singer-actors or dramatic actors, Peter Brook answered, "The singer-actor differs from the dramatic actor in that he is a master of his craft. Behind him lie hard years of

study and stubborn work. He has learned music, correct breathing, and vocal technique. He has studied languages. This gives him a firm ground. He has mastered a craft that will always hold him. That is why the singer-actor with intuition, stamina, and willingness to be truthful can be more true to life and natural than the dramatic actor. He does not need to do anything special. At times he may even remain himself."<sup>2</sup>

The problem mentioned above, viewed in the context of stage directing, clearly points to a priority: all elements and practices used by the stage director to manifest the dramatic content of the spectacle through the performance of the actor-singers must gravitate around their *voice*, which is the basis, the "spring" of sensual-emotional structure, while their physical expressiveness must be a complementary element that is in harmony with the "artificiality" of the phenomenon of voice-instrument. Of decisive importance here is the understanding of the typological *difference* between the art of the opera actor and that of the dramatic actor, a difference closely related to the *object* of the two arts.

In dramatic art, the object of the actor's art is *action*, which may be compared to the *musical-vocal line* in the case of the singer. In dramatic theatre, action is self-initiated by the actor on stage, unfolds according to specific rules, and has a complex structure – physical, textual, inner voice, and imagination. It follows a complex, nuanced logic of conduct that must be deciphered according to the author's text and unfolds in multi-layered psycho-physical action on stage. What leads the action is the fixed text, which is subject to *interpretation*, while the goal is to create a character (a dramatic character). In opera, a character is also created, but through the unfolding of the vocal line of the role, which is fixed above all by musical means and represents an excellent structure: rhythm, dynamics, heights of sound cannot be changed arbitrarily by the performer, the degree of improvisation in the auditory space is reduced to a minimum. While dramatic actors attain high emotional states by uplifting their souls (their psyche) – as in the catastrophic experience of King Lear in the wilderness, Medea killing her children, etc. – in opera, the *vocal score* leads the actor and already contains emotional intensity. Having in mind this fully fixed and given structure, Y. V. Bogatyrev has very aptly compared the vocal line of the opera singer to the "pure structure of the Ancient Greek mask"<sup>3</sup>, which points to the description of the mask made by Y. Barboy, as something "immovably determined, fully manifest and given beforehand – it is a pure structure, shorn of history and, thereby, having achieved full determination, an object massively equal to itself."<sup>4</sup> The emphasis here justly falls on the mask as an independent phenomenon not liable to destruction, breaking

<sup>2</sup> Брук, П. Блуждающая точка: Статьи. Выступления. Интервью. Изд. СПб., М., Артист. Режиссер. Театр. 1996; Гл. VII Сороколетняя война. „Кармен“, Интервью с Филиппом Альбера после премьеры спектакля „Трагедия Кармен“ в Буфф-дю-Нор в ноябре 1981; с.97-98. [Brooke, P. The Shifting Point (in Russian)]

<sup>3</sup> Виж: Богатырев В.Ю. Структура партии-роли. Вестник Челябинского государственного университета.

Филология. Искусствоведение. Челябинск, 2009, № 10 (148), с.164-168. [Bogatyrev, V. Y. The Structure of Roles (in Russian)]

<sup>4</sup> Барбой, Ю.М. Структура действия и современный спектакль. Л., 1988, с.63. [Barboy, Y. M. The Structure of Action and Modern Spectacle (in Russian)]

down into parts. "Such a definition of the mask in Ancient Greek theater," Barboy points out, "probably corresponds precisely to the quality of the vocal score in opera. Its tone and rhythm are strictly harmoniously developed and is a perfect structure, despotically predefined for performance by the composer".<sup>5</sup>

A stage character is created in both arts, and both arts deal with human behavior. Still, in opera, this behavior is displayed through the conventionally encoded language of vocalization, or emotions are mediated through *additional technical skills*. That is why the talent of the singer-actors is defined foremost by their vocal capacity, and the artist's vocal technique is crucial. Dramatic art is the only art that does not require any training in addition to natural talent: singers sing, musicians play instruments, and painters paint. The instrument of the opera artist is his soul, expressed through body and behavior. That is why this art may be the easiest (not requiring special skills) or the most difficult (for the same reason). The play of the soul is a subtle and hard-to-pinpoint process: it cannot be measured through the objective criteria of vocal art, ballet, etc. The means of expression are locked in the actor's organism, in their psychophysique. As for "truth" and "falsehood," the "organic" or the "technical," it is challenging to establish rules and criteria here; the truth is always a relative and flexible concept, so the boundary separating the professional from the amateur is hard to draw here. The avant-garde Russian director and pedagogue A. Vasiliev states, "Theater is a vulgar art. It is not like painting or music, where there are strict correspondences. It's hard to know who is playing what in Theater."<sup>6</sup>

Striving to devise the professional foundations of the art of theatre, it is not coincidental that Stanislavsky turned to music and ballet as arts with stable and well-established professional parameters. Meyerhold did the same when he marked down his stagings on a note scale to create a general theatrical "score writing"; we know that his attempt was unsuccessful.

That is why the need to create an *actor's psychotechnique* arose precisely in the 20th century, a technique that would serve as a lever for stabilizing, controlling, and guiding all the inner processes in the actor. Before that, acting was imitative – it followed specific models. It developed according to a given actor's abilities and skills to assimilate the model he was following. Assimilating the "psychotechnique" invented by Stanislavsky was equal in complexity and difficulty to vocal technique and took years to learn. The partial, superficial lessons in acting that an opera performer is given during their training create in, on the one hand, a misconception as to the complexity of the actor's profession (i.e., they perceive it as something easy that anyone can learn). On the other hand, these

lessons do not provide the set of tools that a future performer will need for their artistic presence in performing an opera role.

At the same time, it is not true that training in acting is not necessary for the opera singer. Besides being a musical art, opera is a *stage art*. Music plays the dominant role in the combination of musical and dramatic, but it "dominates" in the context of the stage; there is no way to eliminate the stress factor of being "on stage" for the opera performer or the whole set of fundamental actor's habits that teach the body of the actor to deal with the psychophysiological changes that occur as a result of being before the public. Stage anxiety is one of the crucial problems of the opera performer. At times, the severity of the problem stays with actors and singing actors throughout their careers, despite their experience in performing on stage. "Many historical facts indicate that even the most experienced musician and actor is not insured against a flop on stage if he is not prepared for the performance. The basic signs of stage anxiety syndrome are related to trembling of the hands, lips, and knees, failure of the voice or hearing, and the inability to focus on the performance of the work. When this state acquires unnecessarily painful forms, it is unpleasant for the performer and linked to professional losses."<sup>7</sup>

In my personal experience as a teacher in acting and singer-actor, I have had occasions to observe in students and colleagues examples of increased anxiety and extreme neuroticism before going on stage at competitions, castings, or rehearsals. On stage, "blocks" can "paralyze" the performer, and though they may be genuinely talented in vocal skills, they cannot show this as they cannot cope with stage stress.

In this connection, there is undoubtedly a need for special training to acquire psychological stability, adapt to the stage, and train the singer-actor to work in the unnatural conditions of being on stage; this training must precede the first earnest performances on stage. The main obstacle, stage anxiety, hampers the capacity of *concentration*, which leads to *muscular tension*. The deep immersion within the performance creates a circle of attention that Stanislavsky calls "the little circle of attention," recommending it to the actors inclined to be very anxious on stage.<sup>8</sup> But the "little circle of attention," as effective as it might be, does not always work due to muscle blockages. If excessive muscular tension arises, it is not possible to concentrate even in the "small circle." Special exercises are needed to relax the muscles, which should become automatic during on-stage performance. We also know that muscle tension disturbs the natural, coordinated activity of all the systems providing creative activity.

The performance of an opera singer requires preparation not only in mastering the vocal score but also in forming a *stable creative self-confidence on stage*,

<sup>5</sup> Богатырев, В.Ю. Структура партии-роли, с.164. [Bogatyrev (ibid) (in Russian)]

<sup>6</sup> Богданова, П. Уроки Анатолия Васильева. Современная драматургия. 2006, Ном. 3, с.192-202. [Bogdanova, P. The Lessons of Anatoliy Vasiliev (in Russian)]

<sup>7</sup> Голубева, Е. Проблема сценического волнения. Ростовская государственная консерватория (академия) им. С.В.Рахманинова; Ростов-на-Дону, с.1. <http://www.rae.ru/forum2012/pdf/0297.pdf>

<sup>8</sup> Станиславский, К.С. Собр. соч. в 8 т. М., Государственное издательство „Искусство“, 1957 [Educating the Actor (in Russian)]

which implies the natural functioning of the body in case a stage “breakdown” occurs. That makes it possible, according to Stanislavsky, “for every feeling created inside to be reflected outside.” Later on, Jerzy Grotowski would seek the same psychological “state,” the kind of transformation of the actor, where “the barrier vanishes between thought and feel, soul and body, conscious and subconscious, views and instincts, sex and brain; if the actor succeeds in doing this, he has achieved plenitude.”<sup>9</sup>

The contradiction between the actor’s play and his vocal performance is part of the overall contradictory unity of the art of opera, which includes within itself heterogeneous principles. This contradiction often leads to an underestimation of the artistic component of the professional skill of the opera singer, particularly the freedom of on-stage presence that permits a free flow of interconnected processes between the musical and the dramatic. This freedom is the *preliminary condition* for creativity. The well-known Russian specialist in the psychology of opera performance, Ivetta Gersamiya, writes, “The principle of performance is determined by the certain state of preparedness, by the force of which psychophysical powers are mobilized and actualized, the powers needed to create a given vocal-scenic character.”<sup>10</sup>

In many musical academies worldwide, the achievements of modern applied psychology are already being used, those related to the methods of *psychological self-regulation*, by which students can train their organism (which is their creative tool) to work naturally under the unnatural conditions of the stage. For instance, in his article “Psychological self-regulation in the process of actor’s training,” Andrey Alekseyev describes the training results, based on the methods of psychological self-regulation, of students in GITIS in Moscow in 1976 – 1978. The experimental work aimed to establish whether psychological self-regulation would help enhance the creative potential of students studying to be actors. Psychological self-regulation (PSR) is based on the theory of Academician P. K. Anokhin on functional systems. According to Alekseyev, one of the essential applications of the theory can be illustrated by the following example: when a person takes part in some activity, changes in the body are determined by that activity. In shifting from walking to running, the leg muscles begin to work more actively, the heart beats faster, breathing becomes more profound, and several other changes occur in the body linked to the new dynamic nature of the movement. The more prepared a person is, the easier and smoother this transition becomes, and vice versa. The coordinated, harmonious work of different organs lies at the basis of this shift. Alekseyev writes, “If we turn to the actor’s profession, an example of uncoordinated work of the

separate organs and systems is the condition before going on stage when some muscle ‘blockages’ occur because of the intense excitement of the nervous system. As a result, the actor stops controlling himself, his movements become rigid and uncoordinated, and his speech is distorted somehow.”<sup>11</sup>

On the other hand, in the psychology of acting skills field, some studies have shown that stress-provoking factors may stimulate creativity. Thus, in the book *The Actor and His Alter Ego* by I. Silantieva and Y. Klimenkov, interviewed professional actors point out that stage stress has the helpful effect of provoking self-confidence: “This is a kind of stress to which I gladly abandon myself”; “The impact is beneficial. There comes a feeling of relief, renewal, physical energy appears”; “If you feel bad, after the performance an uplift occurs, the painful feelings disappear”; “It is a flight!. Your forces are restored. If the ‘watergates’ are opened, the wasted energy comes back. The harmony is preserved.”<sup>12</sup> Acting experience has also shown that “stress-provoking factors may also serve as a sort of key giving access to the subconscious level of the psyche, and that is where lies inspiration, “illumination,” “find,” where memories are provoked, associative thinking.”<sup>13</sup> At times, under certain conditions – for instance, in case of extreme on-stage exhaustion – a “shock of conscience” occurs, and the mental hypertension suddenly releases the subconscious. At times, Stanislavsky tired out the actors utterly (according to the memories of actress S. Pilyavskaya). Seeking to produce a state of “freedom,” he would repeat hundreds of times, “I don’t believe it!” and “Take it from the start!”, until finally somebody would burst into tears or fall to the floor from exhaustion... But, as a rule, “the second breathing” would open up after that, and the rehearsal produced the sought result.<sup>14</sup> Of course, modern stage pedagogy has many exercises that are less burdensome and aim to reduce the tension of the performer *beforehand, by suitable training*, and open the way to the subconscious for him.

The opera singer needs a special psycho technique, just as the dramatic actor does. The salient questions are about the *specific* nature of this technique, how it can combine the management of vocal and acting mechanisms in a unified regulated process, and what the mutual subordination of these processes should be. Psychotechnique (from the Greek word *techne*—art, mastery) is a branch of psychology that deals with applying psychological knowledge to solve practical problems. The German psychologists William Stern and Hugo Munsterberg conducted the first research in this field.

As mentioned above, Stanislavsky introduced the concept of “actor’s psycho-technique” when he began to design his *System*. His work was strongly influenced

<sup>9</sup> Grotowski, J. *Towards a Poor Theatre*. Methuen. Drama. London, 1975, p.44.

<sup>10</sup> Герсамия И.Е. К проблеме психологии творчества певца. Тбилиси: Мецниереба, 1985.; с. 20

<sup>11</sup> Алексеев А.В. Сб. Диагностика и развитие актерской одаренности. Ленинград, Мин. культ. РСФСР, ЛГИТМИК, 1986. [Gersamiy, I. E. On the Problem of the psychology of the Singer’s Work (in Russian)]

<sup>12</sup> Вж.: Силантьева, И.И., Ю.Г.Клименко. Актер и его alter ego. Научно-художественное издание. М., Грааль. ВИНТИ, 2000, с.441. [Silantieva, I. I. and Y. G. Lli-menkov. The Actor and His Alter ego (in Russian)]

<sup>13</sup> Пак там, с.432. [Ibid (in Russian)]

<sup>14</sup> Пак там, с.432. [Ibid (in Russian)]

by psychotechnique in Yoga and by the studies of the French psychologist and psychopathologist Théodule Ribot (especially his discoveries on the mechanisms of memory, emotions, and conscious attention), and later on, by the discoveries of I. P. Pavlov and I. M. Sechenov. Actor's psycho-technique today means a system of means and instruments for solving professional acting problems; the term is often used to train actors. However, its meaning is at times incorrectly understood, and hence psycho technique in general, and its components that the perfection of the practice directly depends on, are rarely underestimated. Psychotechnique is the *neural and physical organization of the actor*, which influences their ability to assimilate, assess, and carry out a specific creative task. It is the skill to operate with processes like thinking, attention, imagination, emotion, movement, and speech. The psycho-technique's quality and level of perfection are determined by how quickly and precisely the actor can fulfill a given task. The main aim is to shape precise reflexes to help the organism work correctly to achieve the set tasks. Psychotechnique aims to establish *automatism and stability* so that the mind will use less effort and energy and shift to the fulfillment of the more problematic tasks and essential places in the work of the organism, which requires *maximal energy*.

Modern Russian music studies, for which an increasingly frequent and detailed focus on the methodology of opera art has become typical, actively use the concept of "psycho-technique of the opera singer." In studies by Prof. V. I. Yushmanov, the idea is limited to psychological awareness, control, and management of *vocal processes*. For V. Starodubtsev and V. Bogatyrev, it concerns the conscious management of the actor's play, and these authors study several elements of its specificity. These focus differences are again related to the problems of musical and dramatic synthesis. The apparent need for combining the two psychotechniques – that of the vocal element and that of on-stage performance – to form a *new, mixed type of psychotechnique* is, however, a very complex problem, mainly because, traditionally, training in vocal and acting skills is not done simultaneously, and because of the existing differences between the nature of music and drama, which hamper the application of a unified approach.

To summarize, it is possible to outline at least two trends - an attempt has been made to discover a common algorithm in the combination of singing and artistic technique (in this case, based on conscious energy modeling; of course, it should be noted that the degree of elaboration of the two processes, vocal and acting, is far from equal). Also, the understanding is disregarded, according to which the "dramatic component" is limited only to the plot framework of the opera; it is seen as integrated with the *irrationality* of the music.

Regarding questions about the specific features of acting training for opera performers as the most problematic aspect of their professional growth and as a condition of productive interaction with the opera di-

rector, we should point out that this training cannot generally be separated from the *esthetic requirements* of opera as a genre. In addition to stable psychotechnique (which adapts the singer-actor to the stage and involves the *basic*, and one could say technical, qualities of muscular relaxation and controlled attention), it is necessary to revisit, *in relation to the genre*, the other elements of actor's psychotechnique (if we follow Stanislavsky's method), i.e., imagination, emotions, action, movement, which are *structural* to the performance. Most important here is the essential idea that it is necessary to preserve the *irrational element of acting* as something that harmonizes with the irrationality of music, which in its spirit and the practical aim is the opposite of the rational, analytical idea contained in psychological acting style.

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# BIOLOGICAL SCIENCES

## THE IMPACT MECHANISM OF CLIMATE CHANGES ON THE HUMAN ORGANISM AND TASKS AHEAD

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### Abstract

The article discusses the negative effects of climate change, anthropogenic emissions on global warming, and large-scale changes in weather conditions. Attention is drawn to the global increase in the unprecedented effects of climate change on humanity and the Earth's climate system since the middle of the 20th century. A plan to reduce greenhouse gas emissions by 40% by 2050 was put forward at COP 29, which was held in Baku, the capital of Azerbaijan, in November 2024. The fact that more than 90% of the main cause of warming is the emission of carbon dioxide (CO<sub>2</sub>) and methane, greenhouse gases, is one of the actual problems of the article. Although the main source of emissions is the burning of natural fuel (coal, naphtha and gas) for energy consumption, the article also discusses the need to solve the problem of land conservation, cutting down trees, and the fact that industrial processes also play a major role, which threatens humanity as a serious problem. The purpose of the article is to highlight the urgent issues of taking into account the danger that increased evaporation will lead to stronger storms and extreme weather conditions in the near future, that is, the protection of Planet Earth, the duty of all mankind.

**Keywords:** COP 29, climate change, global warming, green world.

*The motto of the COP 29 event held in Baku, the capital of Azerbaijan, is: United in the name of the Green World*

Climate change includes both global warming caused by anthropogenic emissions and resulting large-scale changes in weather conditions. Although climate changes have occurred in previous periods, since the mid - 20th century, humankind has created an unprecedented impact on the Earth's climate system, causing changes on a global scale [3]. The main cause of warming is the emission of greenhouse gases, more than 90% of which are carbon dioxide (CO<sub>2</sub>) and methane [4]. Although the main source of these emissions is the burning of natural fuels (coal, naphtha and gas) for energy consumption, land savings, felling of trees and industrial processes also play a role in this [5]. No recognized institution in the national or international arena opposes the human factor in climate change [6]. Reactions to climate change – loss of snow and ice cover that reflect sunlight, increased water vapor (the essence of deposition), and changes in dryness and carbon dioxide in the ocean – increase in temperature. It either speeds up or slows down. The increase in temperature in the dryland is approximately twice the global mean increase, which causes the expansion of deserts, the increase of heat waves and oak fires [7]. Increased evaporation leads to stronger storms and extreme weather conditions [8]. Temperature increases occur in the Arctic, causing permafrost to melt, ice caps to retreat, and sea ice to disappear [11]. Additional heat also increases the risk of critical triggering factors [12]. Effects on ecosystems include displacement or extinction of many types of biology as the environment changes – particularly in coral coasts, mountains and the Arctic. [13].

Climate change jeopardizes food shortages and shrinking water supplies, and contributes to economic impulses; It is also thought that it will increase people's displacement from their homeland. Climate change, which the World Health Organization considers to be the greatest threat to global health in the 21st century, also increases the risk of floods, roadborne diseases and extreme heat [14].

Countries from various countries of the world participated in the COP 29 measures held in Azerbaijan on 11-22 November 2024, and fruitful negotiations took place in this field. passes.

The Conference of Parties (COP) of the Framework Convention on Climate Change of the United Nations is held every year. In the name of the world, The Conference of the Parties (COP) aims to achieve consensus on the Paris Charter and Convention and ensure global unification based on the latest technical information and developments by 1.5°C. They are official measures of the Conference of the Parties adopted by governments to limit international relations. In the time of COP measures, world leaders should evaluate their relations and hold discussions on the best ways to deal with climate changes. They come together for this purpose. Currently, the Convention consists of 198 countries (197 countries and the European Alliance). More detailed information about what the COP is, the COP process, the issues discussed and the many multilateral activities that have been implemented can be found in BMT's Climate Changes. It is possible to obtain it from the website of the Framework Convention (UNFCCC) (18; 19; 20).

Although efforts to minimize future sea leveling are beneficial, there are a number of impacts, including rising sea levels, stabilization of ocean temperatures, and ocean acidification. It will continue for centuries

[15]. Most of these effects are now felt at the stabilization level, which is currently around 1.1 °C (2.0 °F) [16]. Since climate change has increased by 1.5 °C (2.7 °F) and continues to rise further, the Intergovernmental Panel on Climate Change (IPCC) has determined that significant increases in these effects. He published a number of accounts showing that he was prognosed [16]. It is possible to respond to climate change through mitigation and adaptation. When it comes to mitigation, the reduction of gas emissions and their removal from the atmosphere are taken into consideration, these methods include the development and effective use of low-carbon energy sources such as ash and solar. These include gradually stopping the use of coal, increasing the efficiency of energy, and maintaining and protecting forests. Adaptation consists of adapting to the actual or anticipated climate through improved coastal protection, better management in times of disasters, and the development of more resilient crops [17]. Adaptation cannot offset the risk of "severe, widespread and irreversible" effects [18]. Essentially, according to the Paris Constitution, the nations agreed to keep their national frontiers "below 2.0 °C (3.6 °F)". Considering these promises, by the end of the century global unification will reach approximately 2.8 °C (5.0 °F) and the current political temperature will be approximately 3.0 °C (5.4 °F). *naticələnəcək*. The plan to limit consolidation to 1.5 °C (2.7 °F) could be implemented if emissions were halved by 2030 and to zero by 2050.

Climate changes affect not only the surrounding environment but also various aspects of human health, creating a wide range of problems. For example, the increase in temperature, the deterioration of air conditions, the increase in extreme climate events and the change of biological ecosystems directly and indirectly affect human organism. In this article, we will try to investigate these mechanisms with scientific facts and samples. Temperature Increase and Heat Waves are the custom of various phenomena in different parts of the planet.

According to the information of the World Health Organization (WHO), the rise in global temperature in the last ten years has caused the premature death of approximately 150 thousand people every year. Especially during the heat waves that broke out in Europe in 2003, more than 70 people lost their lives in France and Italy. There is a serious need to take care of the health of the population by investigating the principles of its mechanism. Observation and experience have shown that, during periods of thermocouple exposure, hot air makes it difficult for the skin to evaporate from the body. This can result in heat rash and fatal hyperthermia. Those who are most affected by climate problems are the weakest groups - the elderly, the young and those with chronic illnesses. During the 2019 heat wave in India, the temperature reached 50°C and caused hundreds of deaths. Air Pollution and Breathing Problems. Constant carbon emissions and dust storms caused by drought increase the level of pollutants in the atmosphere. According to NASA's research, approximately 7 million people lose their lives every year due to air pollution. Facts show that increased ozone concentration

in urban areas increases the intensity of asthma attacks. For example:

- During the oak fires in 2017 in the USA, the air quality in the city of San Francisco reached 500 AQI (excessively dangerous), which caused the transportation of thousands of people. This led to his application to *Xəstəxana*.

- Long-term air pollution in China has led to an increase in lung diseases.

The negative effects of extreme climate events on people's psychology should also cause humanity to think.

Climate changes cause disasters such as floods, hurricanes and droughts to occur more frequently. These events affect human health both physically and psychologically. In general, the wars that have broken out in recent years, climate disasters, the removal of chemical weapons from storage, the sending of countless and incalculable rockets in the cosmos, and other secret secrets. Experiments that threaten climate change and human resilience have placed all humanity in danger of extinction. How should we counteract these disasters, what precautions should we take to ensure that living beings and life continue on Planet Earth? Each individual must do their part in this work so that life can continue.

Of course, the increase in the number of injuries and deaths during disasters can also create a stressful situation. There are many reasons why psychological stress and the impulses created by disasters cause long-term depression and trauma in people:

- During Hurricane Katrina in 2005, more than 1,800 people died and more than 1 million people were left homeless. This created mass psychological distress. Food Safety and Malnutrition. Climate changes affect global food production. Changes in rainfall patterns and droughts reduce crop yields and cause food conflicts:

- Due to the drought that broke out in Eastern Africa in 2020, 20 million people in the region suffered from hunger.

- The decrease in wheat crop production led to an increase in global food prices.

- In the Sindh region of Pakistan, land productivity decreased by 30% due to water conflict, which increased malnutrition.

The spread of diseases is another fearful situation. Climate changes expand the range of diseases spread by insects. Especially in hot climates, it affects the environment, causes inflammation and increases the risk of Zika virus. According to research by the World Bank, the areas where some diseases spread to the country may expand by more than 20% by 2050.

- In 2016, the Zika virus epidemic in Brazil was associated with climate changes.

- In the year 2023, balance heat events increased by 40% in Eastern Africa due to the increase in hot air and rainfall.

In conclusion, it should be noted that the effects of climate changes on human organism are wide and varied. Increasing temperature, deteriorating air quality, extreme events, food hazards and the spread of diseases are the main mechanisms of these effects. To counter-

act these processes and reduce health risks, global protections against climate change must be strengthened. Climate change combined with human activity plays a significant role in increasing oak fires and is believed to affect future climate variability in many biomes such as tropical precipitation. It will increase the risk and severity of oak fires. The change of the climate system poses obvious dangers, and many of the changes observed since the 1950s have caused unprecedented changes over the decades. shows. The atmosphere and the ocean warm up, the amount of snow and ice decreases, the sea level rises, and the concentrations of istixana gases increase, etc.

Carbon gas is produced through natural combustion (coal, natural gas and naphtha), solid waste, trees and other biological materials, as well as through certain chemical reactions. As a result, it enters the atmosphere. The use of natural fuels is the main source of CO<sub>2</sub>. CO<sub>2</sub> also has direct effects on people's consumption of timber and on other areas where land is used - for example, the breaking of trees, areas for land savings. It can spread through clearing and degrading of soils. During the production and transportation of coal, natural gas and naphtha, methane gas is spread around. Emissions of methane originate both from the decay of individual crops in the wastelands where there are agricultural harvests from livestock and other land-saving areas. Numerous empirical evidence of the unprecedented impact of humans on the Earth System and its global scale (Steffen et al., 2016; Waters et al., 2016) has led many scholars to realize that the Earth is entering a new geological era. He concluded: this era was the Anthropocene. Global consolidation in the last decades has led to the disappearance of ice caps and glaciers, a decrease in the snow cover and the extent and thickness of arctic sea ice, and an increase in the temperature of the cryosphere due to the increase in permafrost temperature. He made it short and removed it. Based on current promises, the world will warm by 2.8°C - close to twice the limit agreed in Paris - by the end of the century. Since the pre-industrial period, the dry air temperature has increased approximately twice from the global average temperature. Climate change has "driven" - we might say with regret - the idea of desertification and land degradation in many regions.

Mountain and arctic ecosystems and biology are particularly sensitive to climate change... As ocean temperatures warm up and the ocean becomes pickier, algae bleaching and coral extinction are likely to increase. "Since climate change is the greatest threat to global resilience in the 21st century, the duty of healthcare workers to present and future generations has become even more fundamental." They protect people from the effects of climate change - warmer weather waves and other extreme weather events; malnutrition; In order to be protected from the effects of environmental pollution, it is possible to prevent damage to the respiratory system, breathing, urinary-vascular and other diseases that are not related to the urinary system. They are on the front lines of treating people who are suffering.

Persistent anthropogenic emissions of SCO<sub>2</sub> and non-CO<sub>2</sub> non-anthropogenic emission forces, which are

decreasing within decades, prevent the rise of the sea level or the climate system. It will underpin anthropogenic global expansion in this period, although it will not underpin many other aspects of its regulation. Persistent anthropogenic emissions of SCO<sub>2</sub> and non-CO<sub>2</sub> non-anthropogenic emission forces, which are decreasing within decades, prevent the rise of the sea level or the climate system. It will underpin anthropogenic global expansion in this period, although it will not underpin many other aspects of its regulation. In model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO<sub>2</sub> emissions decline by about 45% from 2010 levels by 2030 (40–60% interquartile range), reaching net zero around 2050 (2045–2055 interquartile range). All sectors and societies should take into account the causes and consequences of climate changes and remain concerned about the health of humanity and the planet Earth. Otherwise, this beautiful world of ours is doomed to be destroyed very soon. For example

Azerbaijan's initiatives related to "green" energy: Azerbaijan aims to rise to the top of the most productive countries in the field of energy and benefits from its rich energy and solar potential for this purpose. This is also a key component of the country's plan to reduce decommissioning missions by 40% by 2050. The country aims to improve its current energy system in order to increase the share of electricity generated in electricity generation to 30% by 2030 and become a leader in the field of green energy. Azerbaijan will renew its national goals in accordance with the 1.5°C goal in the future within the framework of the documents defined as an exemplary country in this field.

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# EARTH SCIENCES

## INTERNATIONAL CORPORATE RESPONSIBILITY STANDARDS IN THE MINING SECTOR AND THEIR APPLICATION IN THE USA

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### Abstract

This article examines the role of international corporate responsibility (CR) standards in managing the environmental and social aspects of mining in the USA. The impact of standards such as GRI, ICMM, the Equator Principles, and ISO 26000 on the sustainable development of mining companies, their alignment with global requirements, and enhanced reputational appeal is analyzed. The flexibility of the USA legal system is highlighted, allowing companies to adopt international standards to improve their level of environmental and social responsibility. The importance of implementing these standards for the sustainable development of the industry is emphasized.

**Keywords:** international standards, corporate responsibility (CR), mining, USA, sustainable development, ecology.

### Introduction

Corporate responsibility (CR) has become an integral part of sustainable development in the modern world, especially in industries like mining, where companies' activities directly impact the environment, public health, and the socio-economic stability of regions. It encompasses a broad range of obligations and principles, including minimizing environmental harm, ensuring the rights of local communities, protecting the health and safety of employees, and adhering to sustainability principles.

International standards of CR, such as the Global Reporting Initiative (GRI) guidelines, the principles of the International Council on Mining and Metals (ICMM), and ISO (International Organization for Standardization) 26000, play a crucial role in ensuring corporate transparency and responsible business conduct. These standards aim to create unified approaches that support responsible natural resource use, reduce negative environmental impacts, and uphold human rights. For mining companies, adherence to international CR standards has become an essential component of their strategy, allowing them not only to meet global requirements but also to build a positive image.

The purpose of this article is to analyze the application of international CR standards in the mining sec-

tor within the USA. This study aims to assess the effectiveness of these standards in American corporate practice, identify challenges faced by companies, and determine the impact of these principles on the socio-environmental aspects of industry activities.

### Main part. International standards of CR

International standards of CR play a crucial role in creating a unified system of rules and requirements that govern the activities of companies in the mining sector. These standards serve as comprehensive guidelines aimed at achieving sustainable development, ensuring compliance with environmental norms, and enhancing corporate transparency. Among the most significant CR standards are the GRI Reporting Guidelines, the principles of the International ICMM and ISO 26000, and the Equator Principles, which focus on reducing environmental and social risks in large projects.

The **GRI** standards provide a framework for voluntary reporting [1]. This enables companies to assess and publicly disclose data on the social, environmental, and economic impact of their activities. This system is widely used internationally and ensures that stakeholders have access to information about corporate activities. Such transparency fosters increased trust from investors and the public (fig. 1).

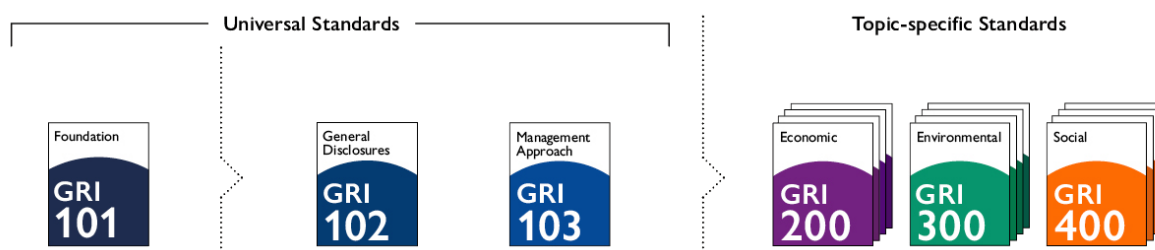


Figure 1. Types of GRI

Reporting according to GRI standards allows for tracking and controlling negative impacts on the environment and social sphere. This is especially important for companies operating in the natural resource extraction sector, where the level of risk to the environment and local communities is particularly high.

The **ICMM** principles are a set of guiding provisions developed for the mining and metals industry to ensure responsible natural resource use and sustainable development (table 1).

Table 1.

| ICMM principles [2]                  |                                                                                                                                  |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Principle                            | Description                                                                                                                      |
| Ethical management                   | Companies are committed to acting honestly, transparently, and responsibly.                                                      |
| Respect for human rights             | Protection of human rights; adherence to labor standards; support for cultural diversity.                                        |
| Environmental protection             | Companies are obligated to protect biodiversity, restore ecosystems, and minimize harmful impacts on the environment.            |
| Energy efficiency and climate change | Reducing carbon footprint and increasing energy efficiency.                                                                      |
| Water resource management            | Responsible water management to minimize impacts on local communities and ecosystems.                                            |
| Waste Management                     | Safe waste handling and volume reduction to minimize environmental risk.                                                         |
| Health and safety                    | Protection of health and ensuring safety for employees and local communities.                                                    |
| Community engagement                 | Supporting the social and economic well-being of communities located near mining sites.                                          |
| Transparency and reporting           | Regulated provision of information; conducting independent audits; informing the public about the results of company activities. |
| Sustainable development              | Adhering to sustainability standards as an integral part of all company operations.                                              |

These principles were adopted in 2003 and aim to minimize the industry's negative impact on the environment and society. They include commitments to uphold human rights, protect ecosystems, manage waste, improve energy efficiency, and ensure transparency and accountability to the public.

**The ISO 26000 standard** was adopted in 2010 by the International Organization for Standardization [3]. It serves as a guide to social responsibility for organizations of all types. The standard defines principles and areas of activity for companies aimed at considering societal interests, ensuring ethical management, and reducing negative environmental impacts. Unlike certification standards, ISO 26000 is voluntary but is used as a benchmark for developing sustainable and socially responsible business strategies. The principles of this standard cover aspects related to human rights, labor practices, environmental protection, fair operational practices, and community engagement. ISO 26000 is particularly relevant for companies whose activities pose health risks to workers and the public, as is typical in the mining sector.

Another significant guideline is the **Equator Principles**, established in 2003 by a coalition of global banks and financial entities, intending to minimize environmental and social risks associated with financing large-scale projects [4]. The original effort to establish these principles received backing from major financial entities like Citi, ABN AMRO, Barclays, and WestLB, aided by the International Finance Corporation (IFC), part of the World Bank Group.

The Equator Principles demand that companies follow specific environmental and social responsibility criteria when executing projects tied to natural resource extraction and other capital-heavy sectors. Financial institutions endorsing the Equator Principles require client companies to submit reports that show adherence to

environmental safety and social sustainability standards in their project choices.

In practice, this reduces the risks of human rights violations and environmental damage, which is particularly important for large infrastructure and industrial projects that often have significant impacts on the environment and local communities.

International CR standards play a critical role in ensuring a unified approach to CR on a global scale, providing companies in the mining sector with clear guidelines for managing the environmental and social aspects of their operations [5]. In a globalized world, these standards not only help reduce operational risks and increase investment attractiveness but also strengthen public trust and enhance companies' reputations.

#### Implementation of international standards in the USA

An example of the effective use of international standards is the American company **Chevron**, which aligns its CR with both GRI principles and the Equator Principles for projects that require large capital investments and involve environmental and social aspects. Chevron meets its obligations to lessen environmental effects, track the impact of its operations on the ecosystem, and honor the rights of local communities. The sustainability report of the company offers details on meeting environmental and social standards, highlighting its commitment to global principles of openness and responsibility.

Another instance is **ExxonMobil**, which utilizes GRI standards and adheres to the Equator Principles while executing large-scale infrastructure projects in the oil and gas extraction industry. The company highlights the importance of environmental protection and the integration of energy-efficient technologies into its production processes.

Unlike several countries where international CR standards are often integrated into legislation, in the USA, regulation in this area primarily occurs at the state level and through federal organizations via environmental laws such as the Clean Air Act and the Clean Water Act. These regulations set fundamental environmental protection requirements, establishing a foundation for CR.

A comparison with practices in other countries demonstrates that the approach to CR in the USA is more flexible than in Europe, where CR standards are often enshrined in law, and companies in countries like Germany and France are required to strictly adhere to them. In Europe, international standards, such as GRI and the Equator Principles, are seen not only as voluntary initiatives but as elements of an integrated regulatory system supported by government programs and public accountability. In the USA, companies like Newmont Corporation, one of the leading gold producers, apply ICMM and GRI standards in their voluntary sustainability reporting, helping to maintain strong international reputational standing and attract investment, even in the absence of legislative requirements to follow these standards.

#### **Analysis of impact on sustainable development**

The adoption of global CR standards greatly influences sustainable progress in the mining industry, aiding in minimizing environmental hazards and promoting corporate social responsibility [6]. These standards assist organizations in managing their environmental footprint and upholding sustainable practices throughout all phases of the production process, from extraction to resource processing and transportation.

From an **ecological viewpoint**, embracing international standards fosters the lowering of pollutant emissions, the effective utilization of natural resources, and the enhancement of waste management systems. For example, businesses that follow ICMM principles pledge to reduce harmful effects on ecosystems, protect biodiversity, and create land restoration strategies after finishing extraction operations. This is especially important for regions where mining operations may have irreversible effects on local flora, fauna, and water resources [7]. By using such international standards, companies increasingly implement emission reduction technologies and air and water quality monitoring systems, which help reduce pollution levels and preserve ecosystems. In the long term, this leads to environmental stabilization, reduced risk of natural disasters, and the conservation of natural resources for future generations.

The **social effects** of implementing international standards are also substantial. CR standards aim to improve working conditions, protect human rights, and support local communities, fostering public trust and reducing social tensions in mining regions. Companies adhering to ISO 26000 and GRI standards often carry out social partnership programs, invest in the development of local infrastructure, healthcare, and education, directly enhancing the quality of life for the population. Additionally, such companies commit to upholding labor rights and ensuring worker safety, which not only improves working conditions but also reduces the risk

of accidents. The impact on local communities also includes involving residents in the decision-making process and considering their opinions in project implementation, which reduces protest levels and enhances the company's local perception.

The **economic impacts** of applying CR standards are expressed in increased business resilience and investment attractiveness [8]. In a context of growing investor and creditor attention to environmental, social, and governance (ESG) criteria, companies that comply with global standards gain competitive advantages, access to international financial markets, and reduced risks. This not only simplifies capital attraction but also lowers costs associated with litigation, fines, and reputational risks. Ultimately, organizations become more resilient and adaptable to changing market and societal demands.

Thus, the implementation of international CR standards has a comprehensive positive impact on sustainable development in the mining sector, contributing to environmental improvement, increased social responsibility, and strengthened economic stability for companies. These standards help minimize the negative consequences of mining activities, build trust among local communities, and create a foundation for the long-term, sustainable development of the industry.

#### **Conclusion**

The implementation of international CR standards in the mining sector in the USA promotes sustainable and responsible business practices that consider the environmental, social, and economic aspects of company operations. Standards such as GRI, ICMM, and the Equator Principles aim to minimize negative environmental impacts and support local communities, thereby strengthening public and investor trust. Although there are no legal requirements in the USA to comply with international CR standards, their voluntary adoption allows companies to maintain a strong reputation and enhance investment appeal, increasing resilience and adaptability to modern market and societal challenges.

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## MODERN TECHNOLOGIES FOR THE DISPOSAL AND RECYCLING OF CARDBOARD PACKAGING

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### Abstract

This article examines modern technologies for the disposal and recycling of cardboard packaging (CP), which have become increasingly relevant amidst global consumption growth and rising waste volumes. Both traditional and innovative recycling methods are explored, including mechanical, chemical, and enzymatic treatment, as well as physicochemical approaches such as hydrothermal and plasma processing. The role of digital technologies, including artificial intelligence (AI) and the Internet of Things (IoT), in optimizing sorting processes and carbon footprint monitoring is analyzed. Special attention is given to the environmental aspects and efficiency of modern recycling methods, which help reduce environmental impact and decrease the use of virgin raw materials.

**Keywords:** cardboard packaging (CP) recycling, chemical treatment, enzymatic recycling, physicochemical methods, digital technologies, carbon footprint, sustainable development.

### Introduction

With the global increase in consumption and waste volumes, the issues of recycling and disposal of cardboard packaging (CP) have become particularly relevant. Cardboard materials are widely used across various industries, from the food sector to e-commerce, leading to their significant share in waste structures. Low recycling rates and improper disposal of CP exacerbate environmental issues, such as pollution and increased carbon footprints. In the context of a shift towards more sustainable production and consumption models, addressing CP recycling has become especially critical.

Cardboard, although biodegradable, decomposes slowly in landfills, emitting greenhouse gases, including methane, which intensifies climate impact. Another environmental concern is the growing demand for virgin raw materials for packaging production, contributing to the unsustainable use of forest resources. For these reasons, global attention is increasingly focused on developing and implementing technologies that can

reduce the volume of cardboard waste (CW), lower environmental impact, and decrease the reliance on virgin materials.

The goal of this research is to analyze modern technologies for CP disposal and recycling aimed at minimizing environmental damage and improving the efficiency of material reuse. The methodological basis of the study includes a review of scientific literature, analytical reports, and industry studies, which provides an assessment of both the technical and environmental aspects of various recycling technologies.

### Main part. The environmental importance of CP recycling

Over the past decades, cardboard recycling in the United States has reached impressive levels: more than 90% of CW is recycled annually, making cardboard the most recyclable packaging material in the country. For instance, in 2022, approximately 34 million tons of CW were recycled, which is 11,7 million tons more than in 2002 (fig. 1).

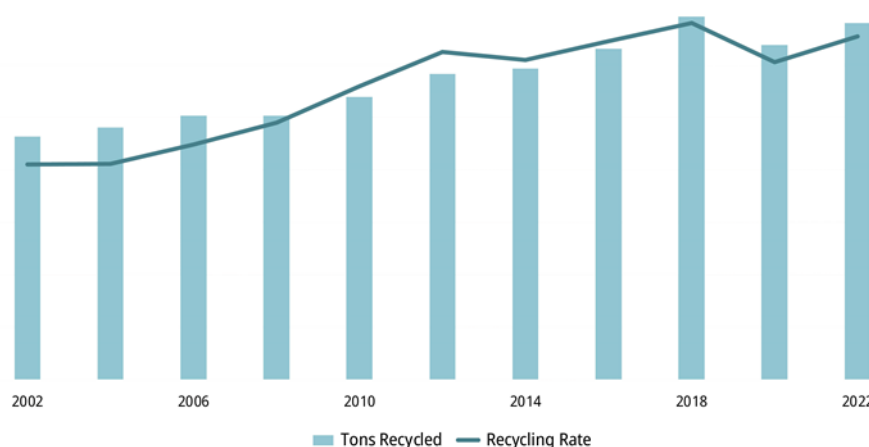


Figure 1. Cardboard recycling rate in the United States [1]

Despite the high recycling rate, CW remains a significant environmental issue. As a biodegradable material, cardboard decomposes slowly in landfills when improperly disposed of, emitting methane and other greenhouse gases that exacerbate climate impact. Incinerating CW, in turn, results in CO<sub>2</sub> emissions and other

harmful compounds, contributing to further atmospheric pollution. This highlights the importance of optimizing disposal processes and implementing modern recycling technologies aimed at minimizing environmental damage. The benefits of CP recycling are not

limited to reducing waste and emissions. It also decreases the consumption of virgin raw materials, thus conserving forest resources and supporting the circular economy.

Analysis of traditional CP recycling methods

The recycling process for CP begins with several basic steps, including the collection, sorting, cleaning and actual processing of raw materials. Initially, CW is collected from various sources, such as residential, industrial, and commercial sites. The collected cardboard is then transported to sorting stations, where it is separated into different types and categories for optimal recycling. After sorting, the material undergoes cleaning to remove impurities, including staples, plastic films,

and other non-cellulose elements, improving the quality of the final product. The cleaned CW is sent for processing, where it is shredded, softened with water, and turned into pulp suitable for producing new cardboard and other paper products. This semi-finished product forms the basis for creating finished recycled materials, which can be used to produce new CP and other paper items.

Several traditional recycling methods are employed to convert CW into reusable raw materials effectively. Each method involves specific stages and impacts the material differently, with unique limitations and environmental considerations (table 1).

Table 1.

| Traditional methods of cardboard recycling [2, 3] |                                                                                       |                                                                                                                         |
|---------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Recycling method                                  | Description                                                                           | Limitations                                                                                                             |
| Mechanical processing                             | Shredding cardboard and turning it into a pulp suitable for creating new products.    | Limited possibilities of cleaning from contamination and the need for additional sorting.                               |
| Energy processing                                 | Incineration of CW for the production of heat and electricity.                        | High emissions of CO <sub>2</sub> and other harmful substances are less preferable from an environmental point of view. |
| Ink removal (deinking)                            | Purification of cellulose from inks and dyes by chemical and mechanical influences.   | The cost of chemical reagents, the need for additional purification processes.                                          |
| Manufacture of secondary products                 | Using recycled cardboard to create new packaging, corrugated cardboard, office paper. | The product quality may be lower than that of products made from primary raw materials, and pre-cleaning is required.   |

According to the author, traditional methods of CP recycling are essential tools for reducing waste volumes and reusing raw materials. However, each of these methods has its limitations, such as high emissions from incineration, the need for complex cleaning during mechanical recycling and deinking, and the decreased quality of products made from secondary raw materials. These limitations underscore the need to develop and implement new recycling methods that are eco-friendlier and more efficient. To achieve sustainable environmental goals, investments in technologies that can improve purification, enhance the quality of secondary materials, and minimize environmental impact are necessary.

Innovations in CP recycling

Modern CP recycling methods represent significant improvements over traditional approaches, offering more eco-friendly and efficient technologies. These methods enable deeper material processing and reduced environmental impact, making them promising amid increasing waste volumes and stricter environmental regulations.

One innovative method is **chemical recycling of cardboard**, which involves using special reagents to break down cellulose fibers and remove impurities such as ink, glue, and dyes. This process ensures a high level of cleanliness and turns CW into raw materials nearly matching the quality of the original material. Unlike traditional methods, chemical recycling can handle stubborn contaminants, yielding clean, strong, and high-quality secondary fiber suitable for creating premium packaging. The chemical recycling process begins with preparing and shredding waste, followed by

treatment with chemical reagents. Commonly used substances include acids, alkalis, and various solvents that break the intermolecular bonds in cellulose fibers, facilitating the breakdown of cardboard structure and contaminant removal. This dissolving process not only purifies the fibers but also softens them, preparing them for subsequent washing and filtration.

Despite its high effectiveness, chemical recycling requires careful control over reagent use and its environmental impact. One of the main challenges is that some chemicals used can pose ecological risks if not properly disposed of or treated after recycling. To mitigate environmental impact, facilities employing chemical recycling implement reagent purification and regeneration systems, as well as waste processing systems for chemical treatment.

An example of successful implementation of chemical recycling is **Georgia-Pacific**, a leading paper product manufacturer. The company actively uses chemical recycling with special reagents for deep cellulose fiber purification, enabling high-quality secondary raw material production. Results have shown that this method effectively removes complex contaminants, ensuring the cleanliness and strength of the final material comparable to virgin raw materials [4].

One of the most eco-friendly and promising methods of CW recycling is **enzymatic degradation**, which uses microorganisms and enzymes to break down cellulose fibers. This biotechnological approach avoids the use of aggressive chemical reagents, making the process safe for the environment. Enzymatic degradation relies on the ability of specific microorganisms, such as bacteria and fungi, to produce enzymes that

break down cellulose, the primary component of cardboard. The most effective enzymes for this process are cellulases, which break down long cellulose molecule chains into simpler sugars. These sugars can then be converted into valuable products like biomass or used in producing secondary cellulose fibers for the paper industry. Enzymatic degradation occurs at moderate temperatures (typically between 20–50°C), minimizing energy consumption.

Enzymatic recycling is highly environmentally safe, as it requires almost no toxic reagents and produces low emissions. This makes the method suitable for use near populated areas and in sensitive ecosystems. It also ensures a clean final product, as biological processes remove impurities and contaminants from the fibers. This makes enzymatic recycling particularly suitable for creating secondary raw materials fit for producing CP that can contact food and pharmaceuticals. Another significant advantage of enzymatic recycling is its low energy requirement. The moderate temperature process minimizes energy use, reducing operational costs and the carbon footprint of recycling. This makes cardboard recycling biotechnology an attractive option for countries aiming to reduce CO<sub>2</sub> emissions and energy consumption.

Companies engaging in enzymatic recycling also achieve impressive results. **Domtar Corporation**, a major producer of paper and packaging materials, uses enzymatic degradation for CW disposal. This has enabled the company to produce clean and safe secondary raw materials suitable for food packaging [5].

**Physicochemical methods** of cardboard recycling include innovative approaches such as hydrothermal and plasma treatment, which significantly accelerate the breakdown and cleaning of CW, enabling efficient production of high-quality secondary raw materials. These methods combine physical and chemical actions, making them highly effective for deep fiber decomposition and contaminant removal. However, high energy requirements make them mainly suitable for industrial applications.

**Hydrothermal treatment** involves using high temperatures (200–300°C) and pressure (10 to 25 atmospheres) to accelerate the breakdown of cellulose fibers. In the presence of water and heat, cellulose and other organic components of cardboard undergo hydrolysis, breaking complex polymers into simpler components such as lignin and simple sugars. This process yields clean cellulose pulp suitable for further recycling. **Plasma treatment** is a physicochemical method that uses high-energy plasma for CW decomposition and cleaning. Plasma, consisting of ionized particles, is generated under high temperatures and electrical voltage and is highly chemically active, capable of breaking down organic contaminants, including persistent chemicals and pigments.

Physicochemical methods of cardboard recycling offer numerous advantages, including high processing speed, effective contaminant removal, and the ability to obtain clean, high-quality secondary raw materials. They also allow recycling of waste containing stubborn impurities, making these methods preferable for processing heavily contaminated cardboard. However, the

main limitations of these methods are high energy costs and equipment complexity.

**WestRock** uses hydrothermal treatment for deep cellulose fiber breakdown under high temperatures and pressure. This method allows the company to efficiently recycle large volumes of contaminated cardboard, improving secondary raw material quality and reducing recycling time [6].

Modern CP recycling methods provide opportunities for environmentally safe and economically efficient recycling, making them promising for use in the global packaging industry. These innovations address the CW recycling problem in a more sustainable and effective way, contributing to environmental protection and natural resource conservation.

### **The use of digital technologies in the CP recycling process**

Digital technologies play an essential role in improving the efficiency of CP recycling. With the development of artificial intelligence (AI), machine learning, and the Internet of Things (IoT), recycling facilities can optimize production processes, enhance quality control, and reduce their carbon footprint. These technologies increase transparency and adaptability in recycling systems, creating conditions for more sustainable and efficient CW disposal.

At large recycling facilities, **AI** algorithms analyze waste images in real-time, classifying them by type, quality, and contamination level. This automates the sorting process, removing the human factor, which in turn improves accuracy and reduces errors. **Machine learning** is also used to predict the volume and quality of incoming raw materials, helping recycling facilities adapt their processes to changing conditions. For example, algorithms can forecast the expected volume of CW during certain times of the year, allowing for efficient resource planning and lower operational costs [7]. Additionally, AI can identify anomalies in waste composition or characteristics, enabling quick adjustments to production processes and ensuring the quality of the secondary raw materials produced.

**Technologies IoT** enable the connection and synchronization of different components of the production line, providing control at every stage of CW recycling. Sensors IoT are placed on equipment and conveyor belts to monitor parameters such as incoming waste volume, contamination level, raw material quality, and processing speed. The IoT system collects and analyzes data in real-time, allowing for the prompt detection of process deviations and preventing subpar recycling. For instance, sensors can track contamination levels of raw materials, ensuring that recycled materials meet set quality standards. Also, IoT optimizes the use of resources such as energy and water, reducing the environmental impact and recycling costs. Data integration through IoT enables more accurate forecasting and material planning, which is crucial given fluctuating demand and supply conditions.

In the United States, digital technologies are actively used to monitor the carbon footprint and account for secondary materials within the recycling system. For example, **Waste Management Inc.**, one of the largest waste recycling and disposal companies, employs

comprehensive IoT solutions and AI for carbon footprint tracking. Their sensor system allows the company to monitor CO<sub>2</sub> emissions at each recycling stage, while AI algorithms help optimize waste transportation routes, reducing fuel consumption and CO<sub>2</sub> emissions [8].

The digitization of CW recycling through AI, IoT, and other innovations increases system adaptability, allowing for a flexible response to market changes and ecological requirements. These technologies make recycling more precise, efficient, and economically beneficial, aiding in the pursuit of sustainability goals and minimizing environmental impact.

### Conclusion

Modern CP recycling technologies offer effective and environmentally responsible solutions for waste disposal and the production of high-quality secondary raw materials. In the context of increasing waste volumes and the global shift toward sustainable production and consumption models, these methods play a critical role in reducing environmental damage and conserving natural resources. Traditional approaches have limitations, prompting the development of innovative methods such as chemical, enzymatic, and physicochemical recycling. These methods enable deeper material processing, the removal of persistent contaminants, and the production of raw materials close in quality to primary ones.

Digital technologies play a particularly important role in optimizing recycling processes and ensuring quality control at all stages. These technologies help companies reduce their carbon footprint, use resources efficiently, and increase overall effectiveness. Thus, the future of CP recycling lies in adopting eco-friendly and energy-efficient technologies that help reduce waste volumes, minimize the use of virgin resources, and lower the environmental impact.

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# ECONOMIC SCIENCES

## ADAPTIVE SCALING STRATEGIES: METHODS AND APPROACHES OF STARTUPS FOR ENTERING INTERNATIONAL MARKETS

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### Abstract

This article explores approaches to analyzing adaptive scaling strategies employed by startups to enter international markets. Both traditional methods, such as franchising and licensing, and modern approaches, including the implementation of digital technologies and crowdsourcing solutions, are analyzed. It emphasizes that flexibility and consideration of local characteristics, such as cultural and legal differences, are essential conditions for successful market entry. The role of strategic planning, financial tools, and partnerships in strengthening startups' positions on the global stage is examined. The study is based on a comparative analysis of practical cases and highlights opportunities for innovative development and long-term business sustainability.

**Keywords:** scaling, startups, international markets, adaptive strategies, digital technologies, cultural adaptation, globalization.

### Introduction

Scaling a business and entering international markets are critical stages in the development of startups in the era of globalization. Competition in local markets, increasing demand for innovation, and the rapid pace of technological advancement drive young companies to seek new growth opportunities beyond national borders. However, this process is accompanied by numerous challenges, including cultural differences, economic instability, and difficulties in adapting to new regulatory requirements. These challenges necessitate a well-thought-out approach based on adaptive strategies that provide flexibility and resilience in the face of diverse external factors.

The purpose of this study is to explore the methods and approaches used by startups to scale and successfully enter international markets. The research examines both traditional and innovative strategies that ensure competitiveness in a global context.

The relevance of this work is determined by the growing importance of internationalization in modern economic conditions and the need to develop universal and adaptive strategies for startups aiming to strengthen their positions in the global market. The methods employed in this study include a comparative analysis of internationalization strategies, a review of current literature on startup globalization, and an examination of empirical data and successful company cases.

### Main part. Defining scaling in the business context

A startup is understood as a young, newly established company that develops innovative products, services, or business models, often leveraging modern technologies [1]. The primary goal of a startup is to quickly capture a market niche, scale its operations, and achieve sustainable profitability. According to the Startup Ranking, the largest number of startups in 2024 is registered in the U.S. (fig. 1).

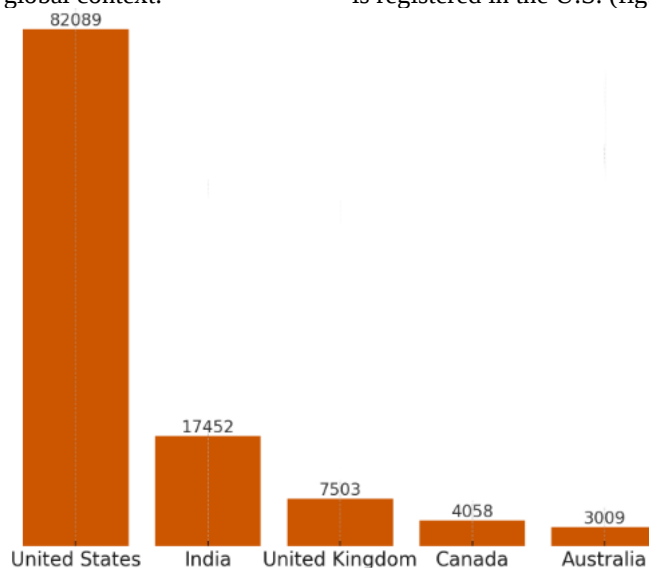


Figure 1. Number of startups in different countries [2]

Scalability is one of the main elements of sustainable company growth. These metric approaches efficient systems and processes that will enable startups to

grow exponentially with as little additional cost as possible. Scaling involves optimizing internal operations,

implementing technologies, and leveraging network effects to capture a larger market share.

Scaling and expansion are commonly misused terms that need to be differentiated. Expansion is when the business expands physically by adding new branches, hiring personnel, or building up production capacity. This often corresponds to a massive increase in operation costs. In contrast, scaling emphasizes the creation of reproducible business models that enable growth with minimal expenses. For instance, startups utilizing digital platforms can serve an increasing num-

ber of clients without a substantial rise in staffing or infrastructure needs, which differentiates their approach from traditional expansion methods.

#### **Classical methods for scaling startups to international markets**

Startups employing classical methods can not only effectively expand their geographic reach but also access new markets with minimal time and resource expenditures. However, their success largely depends on careful planning, consideration of cultural and economic characteristics of target regions, and the willingness to adapt the product or service to local requirements (table 1).

Table 1.

Advantages and disadvantages of classical scaling method [3]

| Method             | Description                                                                       | Advantages                                                                            | Disadvantages                                                                            |
|--------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Franchising        | Granting rights to use the brand and business model for a fixed fee or royalties. | Rapid expansion with minimal costs. Use of resources and knowledge of local partners. | Loss of control over service quality. Dependence on franchisee performance.              |
| Licensing          | Transferring rights to use technologies, patents, or intellectual property.       | Quick access to the market. No need to create infrastructure.                         | Risk of licensing violations. Limited profits from license fees.                         |
| Partnerships       | Establishing strategic alliances with local companies.                            | Rapid market penetration. Shared use of resources and knowledge.                      | Potential conflicts of interest. Difficulty in managing partnership relationships.       |
| Direct Investments | Creating branches or subsidiaries in new markets.                                 | Full control over the business. Possibility of implementing long-term strategies.     | High initial costs. Risk of economic instability in the target region.                   |
| Outsourcing        | Engaging local companies to perform specific functions or tasks.                  | Reduced operational costs. Use of expertise from local performers.                    | Limited control over processes. Risks associated with compliance with quality standards. |

Classical scaling methods for startups have proven their effectiveness in practice and remain relevant tools for entering international markets. Franchising and licensing provide possibilities of fast and relatively cheap access to new regions. Partnerships and direct investments give deeper market involvement and long-term potential. However, each method has its limitations, ranging from careful market condition, cultural specificities, to financial risk analyses. Their choice depends on the strategic goal of the startup, its resource base, and readiness to adapt to challenges of the global market. Put together, these approaches form a basis for successful business internationalization and strengthen its position in the global economy.

#### **Innovative approaches to business scaling**

Modern startups actively employ innovative approaches to scale their businesses, aiming to enhance efficiency and achieve rapid entry into new markets. One of the most in-demand methods is the implementation of digital technologies, which significantly simplify the process of adapting products or services to meet the needs of various regions [4]. Tools such as big data analytics, artificial intelligence (AI), and cloud technologies help startups make more accurate decisions, minimize operational costs, and optimize resource management.

One of the successful applications of innovative use is associated with the development of digital platforms aimed at automating core business processes.

These allow optimizing customer interactions, personalizing offerings according to customers' needs, and integrating numerous sales channels. AI-driven software allows companies to analyze consumer behavioral patterns, predict demand, and enhance the quality of service delivered. These solutions also provide a chance for businesses to adapt their products to cultural peculiarities of target markets, making them more attractive to users.

Another critical area is the use of crowdsourcing and crowdfunding models. These approaches enable startups to attract funding, resources, or knowledge from a broad audience, reducing dependence on traditional investment sources. Crowdsourcing, for instance, provides an opportunity to create more relevant products by receiving direct feedback from target audiences. This is especially important when entering international markets, where needs and preferences can vary significantly.

Supply chain automation and logistics management technologies also play a vital role in innovative scaling. Software solutions such as blockchain ensure operational transparency, improve risk management, and foster trust among market participants. This is particularly relevant for international operations, where transparency and reliability are critical factors.

Startups employing innovative approaches prioritize flexibility and adaptability in their strategies. This enables them to respond more quickly to changes in the market environment and manage external challenges

more effectively [5]. However, implementing innovations requires substantial investments and skilled management to avoid risks associated with their complexity and technical execution. As a result, the use of innovative approaches gives startups a significant competitive advantage, making them more resilient in the face of global competition.

### Adaptive tools for entering international markets

To successfully enter international markets, startups must use adaptive tools that help address differences in economic, cultural, and legal conditions. These approaches are based on the need to consider the specifics of the target market and flexibly adjust business strategies (table 2).

Table 2.

Examples of adaptive tools [6, 7]

| Tool                                  | Description                                                                | Example of application                                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Cultural adaptation                   | Accounting for the language, mentality, and preferences of consumers.      | Localization of application interfaces, use of traditional symbols in advertising, adaptation of packaging.             |
| Culturally-oriented marketing         | Development of marketing campaigns based on local traditions and customs.  | In Kazakhstan, emphasis on traditions and national values; in the U.S., focus on innovation and high technology.        |
| Regulatory adaptation                 | Compliance with local legal norms, tax legislation, and quality standards. | Certification of products according to local standards and adapting to regional legal requirements.                     |
| Logistics and supply chain management | Adaptation of logistical processes to the region's infrastructure.         | Selection of local suppliers, use of hybrid logistics schemes in regions with limited transport accessibility.          |
| Financial strategy                    | Assessment of financial risks and resource allocation for market entry.    | Attracting venture capital funds, hedging financial risks, and managing resource investments for sustainable expansion. |
| Investment in local projects          | Support for local initiatives to build trust within the community.         | Financing educational programs or launching charitable initiatives in the target region.                                |

The use of adaptive tools is a necessary condition for the successful internationalization of startups. Cultural adaptation ensures effective interaction with local consumers, which is especially important in countries with pronounced cultural differences. Regulatory adaptation helps minimize legal risks and optimize operational processes [8]. A financial strategy enables the company to maintain stability, attract resources, and manage risks associated with entering new markets. The effectiveness of such tools depends on thorough preparation, a deep understanding of target regions, and strategic planning. A comprehensive approach to adaptation allows businesses not only to enter international markets but also to establish a strong foothold, creating long-term competitiveness.

### Examples of successful scaling by various companies

American startups demonstrate high efficiency in scaling their businesses to international markets. One notable example is the startup **Deel**, which provides a platform for managing international teams and payroll. Thanks to its flexibility and compliance with local regulations, the company has attracted over 35,000 clients, enabling it to expand its presence to more than 150 markets.

Another example is **Miro**, an American startup offering a cloud-based platform for visual collaboration. Initially created as a tool for team project work and brainstorming in remote environments, Miro has significantly expanded its functionality and customer base since 2020. By 2024, Miro serves over 80 million users worldwide across 200,000 organizations, including Nike, IKEA, Deloitte, WPP, and Cisco. This makes it one of the most successful startups in its niche.

Kazakhstani startups also showcase successful examples of scaling. One of the leaders is **Kaspi.kz**, which began its operations as a financial organization. With the advancement of technology, the company developed a mobile application that provided customers with convenient access to financial services. In 2020, Kaspi.kz went public on the London Stock Exchange. This strengthened its reputation and allowed it to attract international investors. Today, the company holds leading positions not only in Kazakhstan but also in the markets of Central Asia.

Another example is **Chocofamily**. Initially, the startup offered a group-buying service but later transformed into an ecosystem of online services. It now includes food delivery, flight booking, and medical services. The startup caught the attention of international funds and used their investments to enter new markets in Central Asia. This enabled the company to build a scalable business model and lay the foundation for further growth.

Companies from the United States and Kazakhstan demonstrate different approaches to scaling, reflecting the unique characteristics of their markets and economic realities. American companies focus on innovation, flexibility, and technological leadership. They actively adapt their platforms to the cultural and economic conditions of target markets, emphasizing localization of services and ensuring compliance with legal norms. Additionally, significant attention is given to attracting major venture capital investments, enabling aggressive expansion.

Kazakhstani companies focus on building long-term strategies, integrating local solutions, and developing sustainable business models. Particular emphasis

is placed on using digital technologies to enhance service accessibility and expand their customer base. Kazakhstani companies often start by dominating their national market before transitioning to scaling in neighboring countries. This approach is driven by the need to account for the economic, infrastructural, and cultural characteristics of the region.

### Conclusion

Adaptive scaling strategies employed by startups to enter international markets emphasize the importance of flexibility, innovation, and consideration of local characteristics in target regions. Successful scaling requires a combination of traditional methods, such as franchising and licensing, with modern approaches, including the use of digital technologies and crowdsourcing. Examples of successful startups demonstrate that implementing cultural adaptation, complying with local regulations, and strategic planning are critically important elements for establishing a strong position in the global market. However, achieving sustainable growth necessitates investments in technology, risk management, and the development of partnerships, ensuring long-term competitiveness and resilience in a global competitive environment.

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**ВЛИЯНИЕ ОРГАНИЗАЦИОННОЙ КУЛЬТУРЫ НА ФОРМИРОВАНИЕ ПОТРЕБИТЕЛЬСКОЙ ЛОЯЛЬНОСТИ****Салманова Л.***Докторант Бакинского Государственного Университета***THE INFLUENCE OF ORGANIZATIONAL CULTURE ON THE FORMATION OF CONSUMER LOYALTY****Salmanova L.***Doctoral student of Baku State University*DOI: [10.5281/zenodo.14546238](https://doi.org/10.5281/zenodo.14546238)**Аннотация**

В статье исследуются понятие и сущность клиентоориентированной организационной культуры. Рассматриваются стратегии внедрения клиентоориентированной организационной культуры, анализируется связь внедрения клиентоориентированной организационной культуры с формированием потребительской лояльности.

**Abstract**

The article explores the concept and essence of customer-centric organizational culture. Strategies for implementing customer-centric organizational culture are considered, and the connection between the implementation of customer-centric organizational culture and the formation of consumer loyalty is analyzed.

**Ключевые слова:** организационная культура, клиентоориентированная организационная культура, потребительская лояльность.

**Keywords:** organizational culture, customer-centric organizational culture, consumer loyalty.

На современном этапе развития рыночных отношений, компании пытаются внедрить различные инструменты для формирования долгосрочных, устойчивых взаимоотношений со своими потребителями, что является важным фактором успешности организации в долгосрочной перспективе. Использование индивидуального подхода, программ лояльности, улучшение имиджа организации с помощью инструментов зеленого маркетинга являются инструментами с помощью, которых организации выстраивают долгосрочные взаимоотношения со своими потребителями. Однако, исследования показывают, что вопреки используемым инструментам, организации все еще испытывают сложности в процессе оптимизации взаимоотношений с потребителями. У некоторых компаний все еще отсутствует эффективная система и соответствующие технологии для формирования профилей своих клиентов и их сегментирования. Но наиболее значимым фактором, который создает проблемы в процессе улучшения взаимоотношений с клиентами – это отсутствие клиентоориентированной организационной культуры. Организационную культуру можно определить как модели поведения и способы коммуникации внутри организации. Произведя теоретический анализ, можно выделить следующую классификацию стадий развития организационных культур. Стадия зарождения – бюрократический тип организационной культуры, который характеризуется становлением и документальным оформлением бизнеса. Стадия роста – это предпринимательская организационная культура, которая характеризуется высокой степенью

активности и инициативности, а также стремлением завоевывать. Стадия зрелости представлена клановой организационной структурой, которая имеет ориентацию на результат, а самое важное – на увлечение общим делом. Стадия спада может иметь клановый тип культуры, однако с ярко сниженной ориентацией на результат, или же смешанный тип культуры (например, кланово-бюрократический тип организационной культуры).<sup>15</sup> С целью повышения эффективности функционирования предприятия, укрепления организационной культуры, необходимо создание обучающих центров или внедрение специалиста по совершенствованию и укреплению корпоративной культуры на предприятии для достижения эффективности деятельности организации. Как следствие, на выходе как минимум тройной эффект: 1. Здоровый моральный дух коллектива, радость от работы. 2. Счастливый клиент, желающий вернуться снова. 3. Прирост прибыли предприятия. Данную схему можно использовать для любого предприятия с любым видом деятельности, будь то работа с товаром или услугой<sup>16</sup>.

В большинстве компаний организационная культура сохраняет свою ориентированность и сфокусированность непосредственно на продукт или продажи. Или же клиентоориентированность считается приоритетной только в определенных функциональных направлениях компании, например, в маркетинге. Однако, для того чтобы выстраивать эффективные взаимоотношения с клиентами, компании в первую очередь, должны осуществить трансформацию своей организационной культуры

<sup>15</sup> Шейн Э. Организационная культура и лидерство. – СПб.: Питер, 2011. – 336 с

<sup>16</sup> Корпоративная культура и лидерство: пер. с англ. – М.: Альпина бизнес Букс, 2012. – 160 с.

и внутренних процессов на основе философии клиентоориентированности. Ценности и выбранная философия должна быть четко доведена до всех сотрудников организации, вне зависимости от их позиций внутри компании. Лишь в этом случае, удастся сформировать потребительскую лояльность и устойчивость взаимоотношений с клиентами.

Для того чтобы сформировать клиентоориентированную организационную культуру можно предложить следующие шаги.

Во-первых, нужно обеспечить эмпатию сотрудников по отношению к клиентам. Даже если многие компании осведомлены о понятии эмпатия, но, к сожалению, не все понимают, что это такое, и как это можно использовать на практике. Выработать потребительскую эмпатию означает суметь определить эмоциональные потребности своих клиентов, понять мотивы, стоящие за этими потребностями и конечно же реагировать на эти запросы своевременно и эффективно.

Вторым действием может служить создание эффективных каналов и способов коммуникации с потребителями. Компаниям необходимо разрабатывать способы прямого взаимодействия сотрудников с клиентами. В конце концов, каждый сотрудник каким-то образом влияет на клиентский опыт, пусть даже и косвенно, поэтому каждый сотрудник может извлечь выгоду из взаимодействия с клиентами, чтобы лучше их понять и узнать об их успехах и проблемах.

Также, целесообразно использовать показатели, с помощью которых можно будет оценить воздействие организационной культуры на потребителей и рентабельность организации. Сотрудники и руководители с большей мотивацией отне-

сутся к идее создания клиентоориентированной организационной культуры, если с помощью цифр, показателей можно будет измерить, оценить влияние вашей культуры и действий на поведение клиентов. Таким образом вы должны создать механизм измерения корреляции между вашей организационной культурой и вашими показателями прибыльности и продаж.

Важную роль может сыграть создание компенсационных программ. Организации должны укреплять культуру, ориентированную на клиента, через свою программу компенсаций. Для того, чтобы сотрудники знали, что от них ожидаются клиентоориентированные отношения и поведение, в этом должен быть «элемент риска». В этом случае сотрудники будут понимать важность каждого предпринимаемого шага по отношению к потребителям.

Таким образом, можно сделать вывод касательно того, что выбор стратегии, ориентированной на клиента, не принесёт должных результатов если внутренняя организационная культура не подстроится под эту стратегию. Поскольку стратегия и культура должны взаимодополнять друг друга. Стратегическая согласованность видов деятельности является основой не только конкурентного преимущества, но и его устойчивости. Речь идет об операционной эффективности. Если операционная эффективность – это достижение совершенства в отдельных видах деятельности, то стратегия – это правильное сочетание этих видов.

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# DEVELOPMENT OF ECONOMIC COOPERATION BETWEEN INDUSTRIAL ENTERPRISES OF UKRAINE AND THE PEOPLE'S REPUBLIC OF CHINA

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## Abstract

As the field of economic cooperation between Ukraine and the People's Republic of China deepens, cooperation between industrial enterprises plays an increasingly important role. However, with the influence of factors such as the international economic environment, geopolitics, and technological development, this cooperation is also full of challenges and uncertainties. Therefore, this article analyzes the problems arising from the economic cooperation process of industrial enterprises based on the various stages of the development of Sino-Ukrainian economic cooperation, and studies the current situation from the perspectives of Ukraine and China respectively. We hope to find solutions to the problem and promote exchanges and cooperation between Chinese and Ukrainian industrial enterprises to achieve sustained and healthy economic development.

**Keywords:** economic cooperation, industrial enterprises, healthy economic development.

Ukraine and China have a three-fold history of economic development, that have the potential for further development. With the purpose of determining the prospects and opportunities for the development of cooperation between the two countries, we should analyze the stages of the formation of economic cooperation between Ukraine and China.

The initial period of economic cooperation between Ukraine and China. On January 4, 1992, Ukraine established diplomatic relations with China. Since the establishment of diplomatic relations, the economic and trade field has been included in the priority direction of cooperation between the two sides. Senior leaders of the two countries exchanged frequent visits and signed a series of government-departmental cooperation agreements, laying a solid legal foundation for economic and trade cooperation between the two sides. In January 1992, Ukraine and China established mutual commercial representative offices. On October 31, the two countries signed an agreement on the establishment of an economic and trade cooperation mechanism, the Intergovernmental Economic and Trade Cooperation Committee. On April 4, 1994, the first meeting of the Intergovernmental Committee on Economic and Trade Cooperation was held in Kiev. In September 2010, the two leaders agreed to establish an intergovernmental cooperation committee at the level of vice prime minister. In April 2011, the first meeting of the China-Ukraine Intergovernmental Cooperation Committee was held, officially launching the mechanism of the Committee. The Committee consists of seven sub-committees and secretariats, including economy and trade, agriculture, aerospace, science and technology, culture, education and health, and meets every two years. The

Intergovernmental Cooperation Committee of the two countries held its third meeting in December 2017 [1].

In 2011, China and Ukraine established a strategic partnership, and the two sides signed agreements to implement a series of large-scale cooperation projects, which promoted a significant increase in trade volume, and the bilateral trade volume reached a maximum value of US\$11.12 billion in 2013. After the outbreak of the Ukraine crisis, many Sino-Ukrainian economic and trade cooperation projects suffered setbacks, and the bilateral trade volume fell again. In 2016, bilateral trade volume resumed growth again. In 2017, it reached \$7.639 billion, an increase of 17.7% over the previous year. Ukraine's imports from China accounted for 11.4% of Ukraine's imports, and exports to China accounted for 4.6% of Ukraine's exports. The trade volume between China and Ukraine accounts for 8.24% of Ukraine's total foreign trade. In 2017, China was Ukraine's sixth largest export market and second largest source of imports. In China's trade with countries along the "Belt and Road", China-Ukraine trade cooperation is small and unstable, which belongs to the "type to be strengthened". Since 2005, China's trade with Ukraine has been in surplus. At present, China is the second largest source of Ukraine's deficit.

Now, Ukraine and China begin the new stage in economic cooperation. As noticed Ukraine New Times Network on June 16, 2022: According to data released by the National Statistics Service of Ukraine, in the first four months of this year, Ukraine's exports of goods to China nearly doubled compared with the same period last year, reaching \$1.786 billion, and China accounted for 11.1% of Ukraine's total exports. Ukraine's imports from China fell by 5.5% to US\$2.398 billion, accounting for 14.3% of Ukraine's total imports. Ukraine's

trade deficit with China is \$612 million. China has maintained its position as Ukraine's number one trading partner. In the first four months, Ukraine's exports to Russia fell by 13.9% to \$889 million, and imports fell by 37.8% to \$1.56 billion. The proportions of Russia's imports and exports in Ukraine were 9.3% and 5.5% respectively, with imports ranking third and exports ranking second. Overall, Ukraine's trade deficit shrank by three-quarters, to \$675 million from \$2.124 billion in the same period last year. Ukraine's total exports increased by 1.7% from the same period last year to \$16 billion, while imports decreased by 9.3% to \$16.76 billion [2] Please see the table 1.1 below for specific statistical data on economic cooperation and development between the two countries.

Table 1.1

Statistical table of economic cooperation and development between Ukraine and the People's Republic of China

| Year/<br>PeriodYear/<br>Period | Bilateral<br>Trade Volume<br>(USD Billion) | Main Chinese Exports to<br>Ukraine                 | Main Ukrainian Ex-<br>ports to China                  | Key Investment &<br>Cooperation Areas                         |
|--------------------------------|--------------------------------------------|----------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------|
| 1992                           | 0.06                                       | Machinery, consumer<br>goods, textiles             | Grain (wheat, bar-<br>ley), iron ore                  | Diplomatic ties estab-<br>lished, initial trade               |
| 2000                           | 0.52                                       | Electronics, light<br>industrial products          | Agricultural prod-<br>ucts, steel, raw mate-<br>rials | Trade expands; focus on<br>industrial goods                   |
| 2010                           | 7.68                                       | Communication<br>equipment, motor parts            | Corn, coal, aviation<br>technology                    | Strengthened cooperation<br>in agriculture, aviation          |
| 2015                           | 7.10                                       | Consumer electronics,<br>chemical products         | Sunflower oil, met-<br>als, agricultural<br>goods     | Participation in the Belt<br>and Road Initiative              |
| 2020                           | 15.03                                      | High-tech products,<br>medical supplies            | Grain (corn, wheat),<br>iron and steel                | Major investments in ag-<br>riculture and infrastruc-<br>ture |
| 2023                           | 17.05                                      | Renewable energy<br>equipment, industrial<br>goods | Corn, sunflower oil,<br>aviation engines              | Expanded trade relations,<br>focus on green energy            |

Source: developed by author on the basis of WITS [3]

Ukraine is an important node of the ‘Belt and Road”, and Ukraine has significant comparative advantages in participating in bilateral economic and trade cooperation, such as location, market, labor costs, science and technology, and industrial and agricultural foundation. To strengthen communication, honesty and find a way to resolve investment risks, Ukraine has an innate advantage in becoming a hub for sea, land and air transportation and logistics between China and Europe.

Risks currently faced by Chinese companies in Ukraine: Geopolitical tensions between China, Russia and the West have impacted Chinese companies’ operations in Ukraine. Local laws and regulations pose challenges to corporate development and investment.

Opportunities for future investment and development: Potential future growth areas for Chinese investment in Ukraine are post-conflict recovery and infrastructure reconstruction. Chinese companies will

strengthen Ukraine’s role as a hub for Eurasian trade and investment. Overcome obstacles and promote strategic economic cooperation between Ukrainian and Chinese enterprises to jointly develop markets and promote economic development.

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# HISTORICAL SCIENCES

## LENIN AND THE 1919 REPUBLIC OF COUNCILS IN HUNGARY – WHY THE HUNGARIAN COMMUNE COULD NOT SURVIVE

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### Abstract

Based on Vladimir Lenin's ideas the ultimate way to create the new, Marxian world order leads through a series of revolutions. As the end of the First World War brought the collapse of the empires of Central-Europe, the new communist regime of Hungary tried to follow the path of Russia, but the short-lived Republic of Councils in Hungary had to face severe external and internal threats during its 133-day-long existence.

Lenin welcomed the formation of the new government in Budapest in the spring of 1919, and sought to provide help for the Hungarian communists in their fight against the Entente armies, but due to the reality of the military situation of both Russia and Hungary it remained only a verbal support and a series of letters between the leaders.

**Keywords:** Lenin, Hungary, commune, Russia, revolution, Entente, war, republic of councils.

### Lenin's thesis: Russia should only be the spark

Lenin – based on Karl Marx's writings – described the general idea of the revolution as something universal. Something that cannot be put into frames of empires or nations and their states. The idea that Russia could go alone was the furthest thing from Lenin's mind. The Marxian idea of a „world revolution” in Lenin's thinking first meant the „revolutionalization” in/of Russia – something that could give the international revolution the „initial push”.

In his works and speeches given to the Russian proletariat Lenin made several references describing the social-, economic- and political situation of Hungary and the Hungarian working class. For him it seemed to be that a capitalist way out of the crisis was not possible in relation to the Hungarian Soviet Republic, however he regarded the events of 1919 in Hungary with „historical optimism”. The main reason for that was that the proletarian revolution had also been carried out in a more developed sub-region of Europe – in comparison to Russia –, which could have served as a link to the western part of the continent promoting the goal of their ideas. Lenin defined Hungary's position in the Eastern European region as being between Germany and Austria on the one hand, and Russia and the Balkans on the other, distinguishing between different historical times and spaces. The higher economic and cultural level of the Hungarian development than that of Russia particularly captured his imagination, and fuelled his ideas about the development of socialism in Europe. For a long time Hungary was situated within a multiethnic empire, it meant in fact a relatively more developed, but still dependent country. But, he assumed, socialism as a thought and practical idea would thus find more fertile ground in Hungary than in Russia.[1]

It was precisely this „more civilised development” that Lenin often repeated, that Hungary would need less violence; „Other countries will reach the same Soviet power by other, more humane means. That is why the example of Hungary will be of decisive importance.”[2]

Hungary also proved to Lenin that the proletarian revolution was not a Russian specificum. This fact led him again and again to perceive the historical character of the Hungarian situation as different from that of Russia.

According to a newspaper report of 17<sup>th</sup> April 1919, he said in his speech that „...the Hungarian revolution may play a greater role in history than the Russian. In this cultured country, all the experiences of the Russian Revolution are taken into account...” In the same text he adds: „in terms of organisation, the Hungarian proletariat seems to have surpassed us”.[3] In this context, also in the document „Greetings to the Hungarian Workers”, he points out that in the case of Hungary, the unification of the different socialist tendencies had been achieved „in one fell swoop”, because there an anti-capitalist national unity was able to be placed on a broader basis in the war against the Entente.[4]

Therefore in April 1919 Lenin could have imagined that if in Hungary a spark of the revolution found fuel within the society it could be brought into other parts of Europe as well.

### The revolution becomes international

Before and during the First World War Hungary was an integral part of the Austro-Hungarian Empire, a dual-monarchy. After its collapse in the mid of the turmoil of the last year of the First World War, a six-month long period of political- and social revolutions began in the country. On the 30<sup>th</sup> October 1918 the Aster Revolution turned Hungary from a kingdom to a republic and opened up a totally new chapter of its history.[5]

On 13<sup>th</sup> November King Charles IV issued a declaration recognizing Hungary's right to determine the form of the state and withdrew from Hungarian affairs of state,[6] then Mihály Károlyi's provisional government proclaimed the Hungarian People's Republic on 16<sup>th</sup> November 1918. Based on pacifist ideas he ordered the full disarmament of the army and due to this, Hungary was to remain without a national defence at a time of particular vulnerability. The self-disarmament made

the occupation of Hungary directly possible for the armies of Romania, the Franco-Serbian army of the Entente and the armed forces of the newly established Czechoslovakia.

The government of Károlyi resigned due to the Vix Note from the Entente that established a demarcation line between the Romanian and Hungarian armies after Romania rejoined the war – now against Hungary – and made decisive advances. The 21<sup>st</sup> March 1919 meant the end of the first Republic and the proclamation of the Republic of Councils in Budapest. The second socialist state in the world ever to be formed, preceded only by Soviet Russia, yet controlling only about 23% of the territory of pre-war Hungary of 325 411 km<sup>2</sup>.

Though the de jure leader of the Hungarian Soviet Republic was president Sándor Garbai, the de facto power was in the hands of foreign minister Béla Kun, who maintained constant and direct contact with Lenin.

He welcomed the formation of the new government – partly as he knew Kun well personally. His interpretation on the seizure of power in March was based on the heroic concept that at great peril, the Károlyi-government – what he called the „Kerensky fraction of Hungary” – voluntarily invited the communists (out of the prison) to govern.[7] However the reality of the events were not exactly like this, the tendency that helped the communist government reach the power was large-scale, visible and tangible.

The end of the war also meant the „revolution of the national idea” – especially in the East-Central European region as it resulted in the birth of several new or ‘old-new’ states. Lenin’s assumption was that if during the national wars the nationalism and the social aspirations would be intertwined the chances of victory for the revolutions were multiplied. This idea was proved wrong, though at a certain time it seemed to be possible.

The end of the War had serious effects on the way of thinking and on the belief of masses of people. The post-war collapse and trauma hit the whole societies of all belligerent countries hard enough to start questioning the bases. It was an „*unprecedented historical situation that compelled the citizens of Hungary – the proletariat, the landless peasants, tens of thousands of students, artists, intellectuals, displaced war veterans, many members of the bourgeoisie and even segments of the aristocracy, and nobility – to try something they had never tried before: they agreed that their only defense against [the total anarchy of the collapse] was [socialism-communism]. This was, in short, a natural reaction by people who are pushed to the brink.*”[8]

#### **The barrier to success: military aspects**

To answer the question why the Revolution could not spread beneath the borders of Soviet Russia, why it stopped and could not find a stable base in Western parts of the continent, the main point lies in the military situation of the time – and to analyze it, both the Hungarian and the Russian scenes need to be observed.

The key argument is that Lenin had the idea to help stabilize the situation and the base of the Hungarian Soviet regime. In a letter he wrote to Béla Kun only one day after the new government formed, he assured Kun

that „*the working class of Russia will come to their aid with all its might*” and „*...will not allow the imperialists to lay their hands on the new council.*”[9] The only possible and useful way would have been through military assistance, but the reality emerged as an insurmountable barrier to success.

At the time of the proclamation of the Republic of Councils of Hungary there were several frontlines lying on the country’s (former) territory with both active and passive fights going on. On 21<sup>st</sup> March 1919 the Hungarian Eastern front held against the Royal Romanian Army was at around the ranges of Bihar mountains – a line stretching south from river Maros to the Northeastern Carpathians in the north. This roughly signed the historical border territory of Transylvania – fully part of Romania nowadays. The Vix Note of the Entente established a demilitarized zone around the current borders of the two countries in late March. During the spring of 1919 the Red Army of Hungary was the only power to fight for the territorial integrity of the country – besides a special corps named „Székely Hadosztály” led by conservative former WWI generals – however, they only reached partial success and have laid down the arms in late April.[10]

In mid April the Red Army tried to execute an interventional attack on the Romanian Army that led to a fast defeat – causing the retreat of the Reds into the core areas of the country and the advance of the Romanian Army to river Tisza – deep inside the territory of current-day Hungary.

In the south the line along river Maros continued westwards reaching river Dráva – south of it was the Entente Army led by French general Louis Franchet d’Esperey along with the Royal Serbian Army that marched up until this line after the Belgrade treaty – an armistice treaty that marked the southern demarcation line between Hungary and the Kingdom of Serbia.

The third – and last – frontline was in the north held by the Czechoslovak army with a line in the end of March roughly around the current Hungarian-Slovak border. In late April the Czechoslovak troops also crossed the northern demarcation line, and in a few days they occupied big parts of the northern areas of the country – resulting in the Czechoslovak and Romanian armies meeting by river Tisza.

Even though forming a corridor in geographical sense was getting to be impossible as the events of wars were going on, a short-lived chance kept the hopes alive until the mid of the summer. The Hungarian Red Army has succeeded in advancing towards the ranges of the Northeastern Carpathians, and on the (re)conquered territories it gave help in organizing the Slovak Republic of Councils. It was supposed to create a meeting point with the Soviet Red Army during the summer, however both because of the manipulation of the Entente[12] and of the military situation over the Carpathians could not happen.

Meanwhile the military situation in Russia was different in some aspects, but still struggling from the perspective of the Russian Red Army and Lenin. The main similarity was the constant fight and the wars going on all sides. In March 1919 the Russian Civil War

was in a phase when the White Army made decisive advances on the Eastern/Siberian front. Even though earlier the Red Army captured Kiev on 3<sup>rd</sup> February, Anton Denikin's military strength continued to grow in 1919 with significant munitions supplied by the British. Therefore, by the time of the proclamation of the Soviet Republic in Hungary the Red Army of Russia was surrounded by White, British, French and Polish forces on all sides if we look at the map.

The Soviet-Polish War which started at the beginning of the year 1919 meant another big obstacle to reach success – not only in relation to Soviet Hungary, but in general. In early March the Polish forces made advances deep into Soviet-controlled Lithuanian territories; they captured Vilnius on the 19<sup>th</sup> April with the leadership of Marshal Józef Piłsudski.[12]

Some days later Lenin ordered the Western Front leadership to reclaim the city as soon as possible, but the Red Army was defeated. The disability to accomplish the objectives made the Red Army change the focus – therefore from May on the key fights were the ones on the Southern Front in Volhynia, Galicia and Podolia – as well as the war with the Russian Whites that was still going on.

During the spring of 1919 when not only all but any help provided by Soviet Russia, that could have been vital for the survival of Soviet Hungary, was not possible. The path to Hungary was completely blocked in a geographical sense because of the constant military situation. The second factor was the Civil War, the war with the Whites. These two hostilities that were both situated in the heart of Russian land let no other choice for Lenin but just to fight for its own existence and to leave Hungary fight its part of their common war alone.

The expectation of Hungary to have the help of Soviet Russia against its Entente-backed neighbours was proved wrong. Lenin was officially informed on 22<sup>nd</sup> March 1919 that Soviet Hungary offered a defensive-offensive alliance – but he only sent his greetings back and left the proposal unanswered.[13] He was not able to have the Red Army to be sent to the Carpathians to unite with the Hungarian Soviets – even though Leon Trotsky favoured the idea. Lenin's idea was to split the armies as in March 1919 he needed advance both in Ukraine and in Siberia.

In mid April Béla Kun reported to the Revolutionary Governing Council that he had sent messages to Lenin asking them when the two Red Armies would be unified on one front, and proposing an incursion from the Russian Red Army into Transylvania at Máramaros.

Several more messages were sent from Béla Kun to Lenin during April and May – some written in a pleading, some in an angry way, however they were not answered.[14] After the fall of the council system in early August 1919 – due to the Romanian occupation of Budapest – Lenin while giving a speech at a workers's conference simplifies the reason for defeat to the public saying „*we have been and will be saved by this vast territory, but Hungary is too small to repel all its enemies.*”[15] In reality he considered the conquest of the Ukrainian Donetsk Basin more important than the plan of linking the Russian Red Army with the Hungar-

ian one through Romania or Poland – he was preoccupied with the Russian revolution at the expense of world revolution.

### Conclusion

The revolution in Russia was not only a movement against the political system of the time, but it brought a movement against the revolution that was first realized in military conflicts because of the geopolitical reality of the post-World War situation. It had its impact on the era both in political-, social-, economic- and cultural ways.

The greatest realization of the story of 1919 is also that during the spring of 1919 the ideas had to face the reality and the possibilities, and only through this way the actual realization could have happened. The result turned to be unsuccessful from the perspective of the Russian and the Hungarian communist elites. That time was a special occasion for the revolution to spread, but it faced insuperable obstacles and – except in Russia – the reality won over the ideas by the end of the summer 1919 in Central Europe.

It seems clear that Lenin, on the one hand, intellectually, theoretically and politically, prepared the new wave of revolutions, welcomed the initiatives and supported them with what he and Soviet Russia had to offer at the time and in given and fixed circumstances. On the other hand, he undoubtedly over-estimated the depth of this revolution, its universal maturity, the vulnerability of the capitalist system of the „Wallersteinian Centre” and its weaknesses in its capacity for integration – and the 'will' for a world revolution proved to be a historical exaggeration at the time.

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# MEDICAL SCIENCES

## THE GAME IS UNDERGOING A TRANSFORMATION: APTOS VAGINAL THREADS FOR THE TREATMENT OF STRESS URINARY INCONTINENCE

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### Abstract

#### Objective:

This study aimed to evaluate the efficacy of P(LA/CL) intimate threads in treating stress urinary incontinence (SUI) in women, focusing on symptom resolution, patient safety, and complication rates.

#### Materials and Methods:

A retrospective case series was conducted involving 23 women aged 34 to 53 with confirmed SUI. P(LA/CL) intimate threads, specifically Intimate Excellence Method (IEM) and Light Lift Spring Method Soft (LLSS) threads, were inserted into the anterior vaginal wall using local anesthesia. Patients were followed up at one week and three months post-procedure. The efficacy was assessed through the Questionnaire for Urinary Incontinence Diagnosis (QUID), cough tests, and bladder ultrasonography.

#### Results:

Of the 23 women treated, 19 achieved complete resolution of SUI symptoms, while four experienced mild symptom improvement. Two patients exhibited mild urinary leakage during the third-month follow-up cough test. No significant complications were observed, and all patients were able to resume daily activities immediately after the procedure. The treatment demonstrated high effectiveness across different SUI severities (Grade 1–3).

#### Conclusion:

P(LA/CL) intimate threads provide a safe, minimally invasive alternative for treating stress urinary incontinence, with a high success rate and minimal downtime. This treatment may offer a viable non-surgical option for women with SUI, including those with severe symptoms.

**Keywords:** threads, stress urinary incontinence (SUI), Poly L-Lactic acid, Aptos Threads.

### Introduction

Stress urinary incontinence (SUI) is an unintentional release of urine that occurs when coughing, sneezing, or engaging in physical activity. This is a prevalent issue that affects women once they have reached the age of 40. The incidence of stress urinary incontinence SUI ranges from 4% to 35%, and this rate tends to rise with aging.<sup>1</sup> Parity, obesity, age, and smoking are established risk factors for SUI.<sup>1</sup> SUI results in social and psychological issues for women and impacts their lifestyle.<sup>2</sup> Due to the global aging of the population, SUI exerts socioeconomic pressure. Researchers and physicians are trying to come up with an effective treatment. Patients have the option to undergo either non-surgical or surgical procedures. Non-invasive treatments may require a significant amount of time and effort from patients, and may also result in low treatment efficacy. Multiple surgical interventions are detailed, with the majority exhibiting elevated rates of complications and adverse effects. Novel research specifically addresses underlying molecular causes of SUI. This research primarily targets tissue components such as collagen and elastin, as well as factors related to nerve regulation and muscle function.<sup>3</sup> Additionally, cell therapy is being explored as a potential treatment approach.<sup>3</sup> Nonconventional, minimally invasive therapies are increasingly being used for the treatment of SUI.<sup>4</sup> The current surgical treatments aim to rectify the inadequate angle of the urethra and bladder, with the objective of addressing the excessive mobility of the urethra. The most often used method to address SUI is

to elevate the bladder neck by creating a hammock using mesh.<sup>4</sup> The objective is to provide assistance to the pubourethral ligament and alter the angle of the urethrovesical junction. Even though this traditional technique is widely utilized in operating rooms, patients do not always provide positive feedback. This failure may be attributed to the cause, and the procedure of SUI correction and not only to the abnormality in the pubourethral ligament. Yang et al. provide evidence that various anatomical factors contribute to the formation of SUI.<sup>5</sup> The urethral mucosa possesses a sealing property that is compromised in individuals with SUI. The researchers also found that the integrity of the urethral sphincter, the elastic nature of the urethral wall, and the greater length of the functional urethra are crucial for the proper functioning of the urethra and the prevention of urine leakage. Tomatze et al. conducted a comparative analysis of MRI data of the pelvic floor before and six months after the installation of Aptos intimate threads for the treatment of SUI and their findings were in line with those of Yang et al.<sup>6</sup> The researchers observed that following the Aptos intimate placement, there was an increase in the thickness and volume of the urethral mucosa and muscles. It was seen that the urethra became narrower, with thicker walls, and there was a noticeable increase in density within the inter-urethra-vaginal gap. Aptos intimate threads effectively addressed urethral abnormalities at both the molecular and physical levels, resulting in a high success rate in the treated group.<sup>6</sup>

More physicians incorporate technologically advanced treatment modalities such as laser, exosome, and stem cells into their practices on a daily basis. The Aptos intimate vaginal threads for SUI is an innovative method that has the potential to revolutionize the treatment of this problem.

### **Materials and Methods**

#### **Ethical Considerations**

The study received approval from the Institutional Review Board (IRB) of Ebru Unal Clinic. All patients provided written informed consent before participation, and the study was conducted in accordance with the 1975 Declaration of Helsinki as revised in 2000.

#### **Patient Demographics**

In this retrospective study, a total of 23 women were treated in 2022 and 2023 for complaints related to SUI. All patients provided written informed consent before participation and a cough test was carried out to confirm the presence of SUI in patients. The Questionnaire for Urinary Incontinence Diagnosis (QUID) was administered both prior to and three months following the procedure. (Figure 1) The patients' ages ranged from 34 to 53, and their BMI was between 21-27. Two patients were nulliparous, while all the remaining others had a history of vaginal delivery. One patient underwent a hysterectomy; three had vaginal laser treatment, and one tried radiofrequency treatment for SUI, but did not experience a favorable outcome. The severity of SUI was assessed using the Ingelman-Sundberg scale: Urinary incontinence of Grade 1 was identified as being triggered by coughing or sneezing, Grade 2 urinary incontinence was triggered by jogging or bending down to pick up an object from the floor, and Grade 3 urinary incontinence was triggered by walking or climbing stairs.<sup>7</sup>(Figure 2) Ten patients had Grade 3 SUI, and they experience daily episodes of urine leakage, necessitating the usage of pads. Women with an ongoing vaginal infection, current pregnancy, bleeding condition, aspirin intake, or severe pelvic organ prolapse (Stage 3 or higher according to the Pelvic Organ Prolapse Quantification Scale) were excluded from the treatment.<sup>8</sup> All women included in the treatment experienced either Stage 1 or Stage 2 Pelvic Organ Prolapse.

#### **The instrument**

Aptos threads consist of Poly-L-Lactic Acid and Poly Caprolactone P(LA/CL). Poly L-lactic acid has a bio-stimulatory effect on the tissue, while Polycaprolactone is accountable for the extended duration of Poly L-lactic acid in the tissue, lasting for 24 months. Intimate Excellence Method (IEM) and Light Lift Spring Method Soft (LLSS) threads are utilized for the treatment of SUI. IEM is a type of absorbable thread with multi directional barbs. Its distinctive characteristic is that it amplifies the strength of tissue integrity. Inserting multidirectional barbs can enhance the distribution, stress resistance, and grip of soft tissues. The efficient design of IEM involves approximating the entire treatment region using a straightforward and noninvasive approach. Threads are placed through a cannula with a round tip that minimizes bleeding and edema following the surgery. Light Lift Spring Method Soft (LLSS) is the second thread used in the procedure which has a blunt-tipped cannula encircled by a spirally coiled

thread. The flexibility and form of LLSS remain intact after insertion. When LLSS is introduced into the vaginal tissue, it promotes the creation of collagen and creates new, healthy vaginal mucosa.

#### **The procedure**

Aptos intimate threads were inserted into the anterior vaginal wall, positioned in between the urethra and the vaginal mucosa, to treat SUI. The patients were instructed to empty their bladder immediately prior to the treatment. The procedure was performed using local anesthesia without any prior administration of premedication. Following the administration of local anesthetics to the front part of the vaginal wall, two clamps were used to secure the area located 1.5 cm away from the opening of the urethra in order to stabilize the anterior vaginal wall. An 18-gauge needle was used to penetrate the vaginal mucosa, creating an entry point for the threads, which were inserted through this access point. First, IEM was used. From left to right of the anterior vaginal wall, five IEM threads were placed in a parallel direction. The threads were inserted into the vaginal canal with a length of 8 cm. Two LLSS threads were positioned beneath the urethra, while the other two were placed on the left and right sides of the urethra. The threads formed upward pressure on the bladder neck, securing the urethra and imitating the vesicovaginal fascia, which reinforced the vaginal wall. If necessary, the 4.0 rapid vicryl is used to ensure the closure of the access point. The mean duration of the procedure was 25 minutes. Following the treatment, patients were advised to resume their normal daily activities while refraining from engaging in sexual intercourse for two weeks.

#### **Assessment**

The patients were examined at one week and three months post-procedure. None of the patients experienced any issues associated with Aptos intimate threads, and they reported that the resolution of incontinence began immediately. On the day of the procedure, every patient was able to urinate without the need for bladder catheterization. During the third month's appointment, all patients had a cough test. The bladder was assessed with vaginal ultrasonography. Upon observing that the bladder contained approximately 200cc of urine, the patients were instructed to cough. Two patients experienced urinary leakage during the cough test. According to QUID, four out of the 23 patients reported that they experienced mild-level SUI even after the insertion of Aptos threads. (Figure 3) One patient had undergone a procedure in 2022 and then received another Aptos threads insertion in 2023. After the second process, she was completely dry. Nineteen patients reported experiencing a total resolution of their symptoms. (Table 1) Before the procedure ten patients had reported urgency, which was subsequently resolved. Five patients reported experiencing nocturia, waking up three or more times during the night to urinate. This issue was also improved after thread implantation.

#### **Discussion**

Given its high prevalence among premenopausal and menopausal women, researchers and physicians are actively seeking a remedy for SUI. Surgical and non-surgical treatments are both methods implemented in

clinical practices. Women with minimal or mild symptoms, or those who are unable to endure the surgical criteria or may not be able to tolerate surgery, are recommended to engage in Kegel exercises, which necessitate a prolonged duration. However, the success rate for treating SUI using Kegel exercises over a period of 12 months is 58.8%.<sup>9</sup> TOT and TVT were identified as gold-standard for surgical corrections of SUI.<sup>10</sup> Unfortunately, the utilization of pelvic sling meshes for the treatment of SUI was prohibited by the FDA due to its complications and side effects.<sup>11</sup> Despite the off-label application of mesh and the woman's acceptance of procedure risks, the failure rate of TOT is 37.5% at the 3-year follow-up.<sup>12</sup> Hospitalization is required for all surgical treatments of SUI, which involve problems such as bladder laceration, urethral laceration, hemorrhage, mesh rejection, dyspareunia, and other issues. In addition, they may lead to a delayed overactive bladder. Women exhibit reluctance towards undergoing surgical operations due to their apprehension of the potential lack of desired outcomes following conventional surgical interventions for SUI.<sup>13</sup> Numerous therapy options have been proposed, but unfortunately, there is a lack of standardization for measuring outcomes and assessing the efficacy instruments.<sup>14</sup> Rovner et al. established the concept of the 'ideal treatment option' as one that is 100% effective and long-lasting, as well as being simple, fast, and easy to perform. It should also be minimally invasive and fully reversible, suitable for all types of SUI, and have low rates of morbidity and complications. Additionally, it should be affordable for patients, healthcare facilities, and the healthcare system as a whole.<sup>15</sup>

Novel therapeutic approaches for the management of SUI are currently being investigated. Li et al. revealed that the expression levels of integrin  $\beta 1$  (also known as CD29), TGF- $\beta 1$ , and type I collagen are reduced in the tissue samples obtained from the vaginal

wall of patients with SUI compared to samples obtained from non-SUI donors.<sup>16</sup> Harland et al. highlight new treatments for SUI that increase TGF-beta in the vaginal mucosa, thereby promoting the synthesis of collagen types 1 and 3. Elevating the levels of collagen type 1 and 3 will enhance both the structural integrity of the tissue and the functionality of the urethral muscles.<sup>17</sup> In their work, Cho et al. demonstrated that the addition of PLLA-PCL under the rat skin resulted in an elevation of TGF1, Collagen 1, and Collagen 3 levels after three weeks.<sup>18</sup> Aptos intimate threads have a stimulating impact on collagen type 1 and 3 in the vaginal mucosa, which helps correct SUI. Based on our observations and the literature, bio stimulating effect of Aptos intimate threads improve the integrity of the urethral mucosa and enhances the functioning of the urethral muscles.

The learning curve for placing Aptos intimate threads for SUI is simple and fast. A surgical setup is not necessary as the procedure can be conducted in outpatient settings without any interruption. The installation of Aptos intimate threads is a more cost-effective option compared to any surgery for SUI, and its effects are immediately apparent. Tomatze reported that after a 3-year follow-up, all treated patients were completely free of symptoms related to SUI. However, additional trials are required to assess the durability of the treatment. Alternatively, reapplying the threads is a simple and efficient choice for patients experiencing SUI recurrence following the Aptos intimate threads surgery. Based on our clinical experience and findings, we can confidently assert that Aptos intimate threads for SUI represent a groundbreaking and transformative treatment option. They are an ideal alternative treatment for SUI that can be recommended to women of all ages regardless of their number of pregnancies.

Table 1.

QUID before and after the procedure

|                                                | Before | After |
|------------------------------------------------|--------|-------|
| <b>When you cough or sneeze</b>                | 23     | 2     |
| <b>When you bend down or lift something up</b> | 10     | 0     |
| <b>When you walk quickly, jog or exercise</b>  | 10     | 2     |

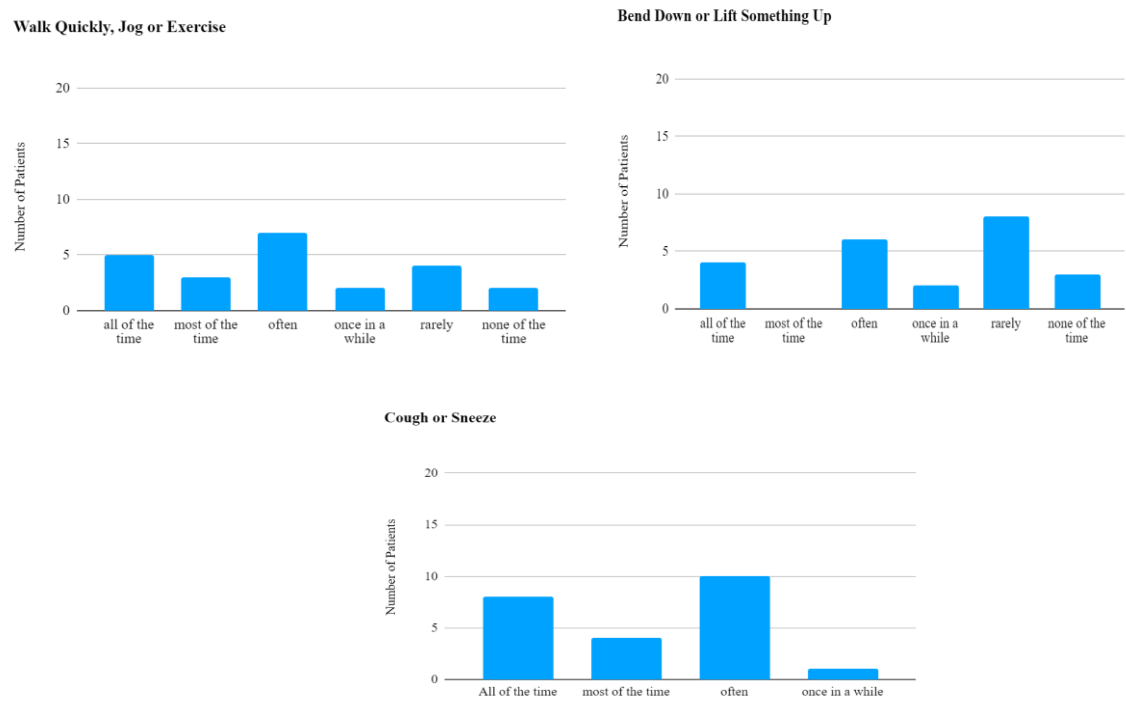


Figure 1: Questionnaire for Urinary Incontinence Diagnosis results of patients

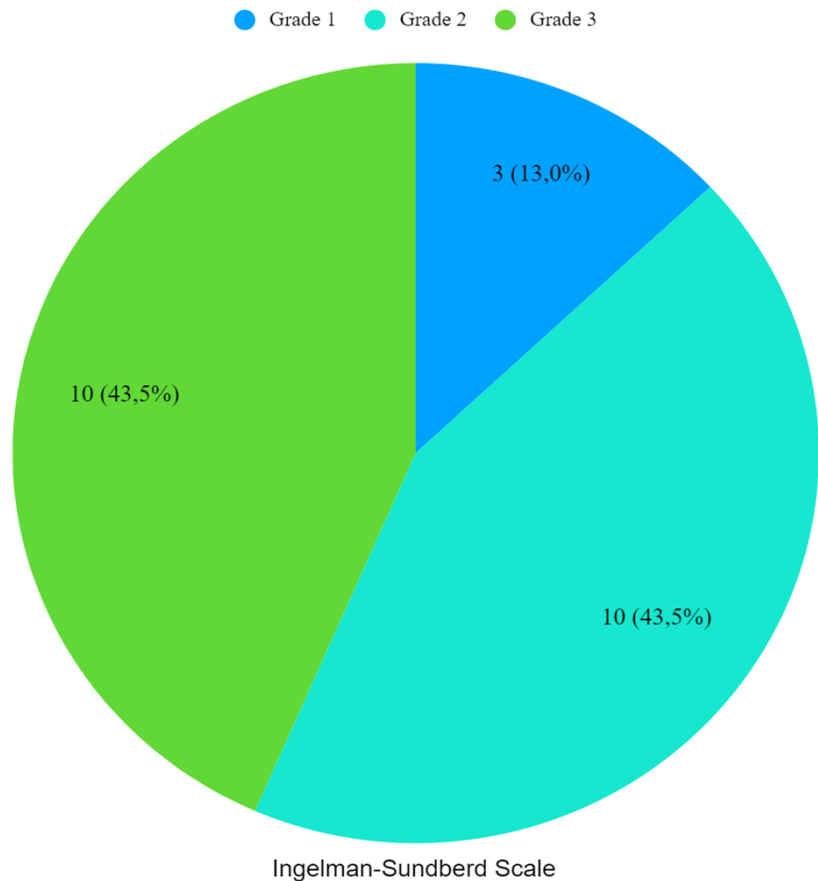


Figure 2: Grouping of patients regarding SUI according to Ingelman-Sundberg scale

## Walk Quickly, Jog or Exercise

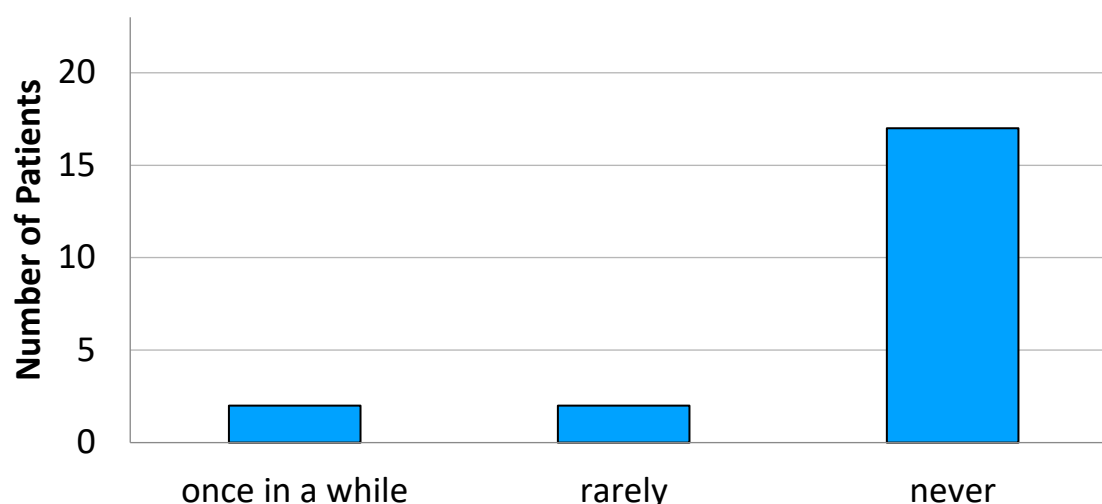


Figure 3: QUID after the surgery

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## THE PREVALENCE AND PATTERNS OF IMPAIRED LUNG FUNCTION IN IRAQI PATIENTS WITH TYPE II DIABETES MELLITUS

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### Abstract

**Background:** *Diabetes mellitus* (DM) refers to a group of metabolic disorders that share the phenotype of chronic hyperglycemia, leading to chronic macrovascular and microvascular complications if not managed properly. Among these complications, lung involvement has been poorly characterized and followed worldwide, although the lung is a major organ in the body, same as other organs that are affected by microvascular and macrovascular complications. **Aim of study:** To determine the prevalence and patterns of impaired lung function in Iraqi patients with type II DM. **Patients and methods:** This cross-sectional study included (100) patients with II diabetes who were visiting Baghdad teaching hospital during the period from August 2014 to March 2015 for follow up. The patients accepted to take part in this study, after fulfilling the exclusion and inclusion criteria. The pulmonary function test was carried out using the Spirometer according to standard guidelines. **Results:** The results showed that 58 (58%) of type II DM patients had impaired pulmonary function, 38 (38%) had restrictive defect. Other impaired pulmonary functions showed that obstructive pattern constituted (13%) and mixed pattern constituted (7%) of the patients. **Conclusions:** Type II *Diabetes mellitus* can adversely affect and impair pulmonary function, this impairment, predominantly show restrictive pattern of airway disease, in addition to other less common patterns of involvement.

**Keywords:** Type II diabetes, Impaired lung function, Prevalence, Patterns.

### Introduction

*Diabetes mellitus* (DM) refers to a group of common metabolic disorders that share the phenotype of hyperglycemia. Several distinct types of DM are identified and are caused by a complex, genetic and environmental factors. Depending on the etiology of DM, factors contributing to hyperglycemia include: Reduced insulin secretion, decreased glucose utilization and increased glucose production [1].

*Diabetes mellitus* is classified on the basis of the pathogenic process that leads to hyperglycemia into: Type I DM, which is the result of complete or near-total insulin deficiency, type II DM, which is a heterogeneous group of disorders characterized by variable degrees of insulin resistance, impaired insulin secretion, and increased glucose production. Other etiologies for DM include gestational DM and secondary causes of DM such as pancreatitis, pancreatectomy, acromegaly, Cushing's syndrome, glucocorticoids and infections such congenital rubella, cytomegalovirus, coxsackie virus [1].

The incidence of DM is increasing and is becoming a global epidemic due to population growth, aging, urbanization, increasing prevalence of obesity and physical inactivity. The International Diabetes Federation (IDF) has subsequently released estimates of the numbers of people with diabetes for 2003 and forecasts for 2025 of 194 million and 334 million, respectively [2].

One of the main problems facing patients with DM in addition to the problems of adhering to a daily healthy life style and compliance with treatment, are the well-known chronic complications of DM, especially if it was not managed properly. These complications are

classified into (1): Microvascular complications (neuropathy, nephropathy and retinopathy) and (2): Macrovascular complications (coronary artery disease, cerebrovascular accidents and peripheral vascular disease) [1,3]

Lung involvement in diabetes mellitus (the subject of our study) has been poorly characterized and followed worldwide [4]. While it is known that persons with DM are at increased risk of pulmonary infections, bronchiectasis and abscesses [5,6], several outcomes has been described regarding the pulmonary function [7].

Pulmonary diabetic microangiopathy usually remains under-recognized [5], and pulmonary damage in most patients with DM is subclinical and rarely present as a complaint [8]. Reduced antioxidant defense of the lung and immune function impairment is another causative factor that reduces lung function [9, 10].

Respiratory muscle weakness reduces inspiratory and expiratory capacity and this decreases the vital capacity. So, measurement of FVC is an excellent mean of detecting respiratory muscle weakness [11].

### Patients and methods

This cross-sectional study included (100) patients with II diabetes who were visiting Baghdad teaching hospital during the period from August 2014 to March 2015 for follow up. The patients accepted to take part in this study, after fulfilling the exclusion and inclusion criteria. The pulmonary function test was carried out using the Spirometer according to standard guidelines.

Complete physical examination especially of the respiratory, cardiovascular and skeletal system was performed to help in the exclusion of patients with acute and/or chronic respiratory disease.

*Diabetes mellitus* type II patients included were previously diagnosed and confirmed by HbA1C, and already treated by oral antidiabetic agents.

Patients with history of acute or chronic respiratory infections, asthma, chronic obstructive pulmonary disease (COPD), heart failure were excluded from the study. Subjects with history of smoking, neuromuscular diseases, and those who had undergone chest surgery or other major operations, and patients with gross abnormalities of the thoracic cage were also excluded from the study, while all other patients with type II DM without the above conditions were included.

Pulmonary function test was done by a trained spirometrist using a master lab (made in Germany). The Forced expiratory volume in one second (FEV1), forced vital capacity (FVC), and ratio of FEV1/FVC were measured.

The results were given in liters and compared to the predicted values of patients themselves, using the European thoracic standardization of spirometry. All measurements were made in an upright sitting position with nose clips. The patients held the mouth piece that is attached to the spirometer, (avoiding the tongue) in the mouth tightly to prevent leakage of air. Then the patients were instructed to inspire maximally and after that, to expire forcefully at once through the mouth piece into the spirometer.

The best of three acceptable measurements were taken. The outcomes of the test were classified as

- Normal if FEV1/FVC was greater than 70%.
- Obstructive ventilatory defect if FEV1/FVC was less than 70%.
- Restrictive ventilatory defect if the ratio of FEV1/FVC was greater than 70%, and the ratio of obtained FVC / predicted FVC less than 80%.
- Mixed ventilatory defect if FEV1/FVC was less than 70%, and the ratio of obtained FVC to predicted FVC was less than 80% [10,12].

#### Statistical analysis

Statistical package for social science version 20 (SPSS-20) was used for data analysis. Continuous variables were presented as mean  $\pm$  SD and discrete variable was presented as number and percentage. The T-test for independence was used to test the significance between continuous variables. Binary logistic regression analysis was used to predict certain variables. P-value of ( $<0.05$ ) was considered significant.

#### Results

In the current study, 100 patients with type II diabetes were studied. Results in table (1) showed that the mean FEV1 in diabetic patients was significantly lower than the predicted FEV1 values ( $p=0.001$ ), and the mean FVC in diabetic patients was lower than the predicted FVC ( $p=0.001$ ).

Table (1)

Pulmonary function test values of patients and predicted

| Variables |           | N   | Mean | SD    | p-value |
|-----------|-----------|-----|------|-------|---------|
| FEV1      | Patient   | 100 | 2.19 | 0.75  | 0.0001  |
|           | Predicted | 100 | 2.76 | 0.72  |         |
| FVC       | Patient   | 100 | 2.73 | 1.12  | 0.0001  |
|           | Predicted | 100 | 3.35 | 0.853 |         |

Total prevalence of impaired pulmonary function test in patient with type II DM was 58%. Restrictive pattern was shown in 38% of them, 13% had obstructive pattern, while 7% had mixed type as illustrated in table (2).

Table (2)

Prevalence of normal and impaired pulmonary function test

| Prevalence according to pattern |             | percent | Total percent |
|---------------------------------|-------------|---------|---------------|
| Impaired PFT                    | Restrictive | 38%     | 58%           |
|                                 | Obstructive | 13%     |               |
|                                 | Mixed       | 7%      |               |
| Normal PFT                      |             |         | 42%           |

The dominant effect of type II DM on pulmonary dysfunction was the restrictive pattern of involvement of different degrees:

1- 20 (52.6%) of the patients with restrictive lung involvement was of mild severity, their FVC was between 65%-80% of the predicted according to American Thoracic Association (ATS).

2- 13 (34.2%) of the patients with restrictive lung involvement was of moderate severity, and their FVC was between 50-65% of the predicted according to ATS.

3- 5 (13.2%) of the patients with restrictive lung involvement was of severe form, and their FVC was less than 50% according to ATS as shown in table (3).

Table (3)

Degree of severity of restrictive pulmonary function

| Variable                             | Frequency |    | Percent |
|--------------------------------------|-----------|----|---------|
| Severity of restrictive lung disease | Mild      | 20 | 52%     |
|                                      | Moderate  | 13 | 34.2%   |
|                                      | Severe    | 5  | 13.2%   |
|                                      | Total     | 38 | 100%    |

## Discussion

Only few studies were made focusing on the association between diabetes and abnormal pulmonary function test, particularly in the middle east and especially in Iraq [13].

In this study, type II diabetes was associated with impairment of pulmonary function in the form of a significant reduction in FEV1 and FVC and a significant increase in FEV1/FVC ratio, compared with their matched predicted values.

The most obvious effect of type II DM on pulmonary function is in the form of restrictive pattern which is mainly due to non-enzymatic glycosylation of the lung which is rich in collagen and elastin, that may lead to stiffening of the thorax and lung parenchyma [14].

Obstructive impairment in patients with diabetes is related to the presence of systemic inflammation and is associated with endothelial dysfunction that in addition, it may contribute independently to airflow obstruction [15].

Previous studies that were done in Iraq, [13] concentrated only on the effect of type II DM on lung function, not the prevalence. They found that the main impairment of the pulmonary function in type II DM was also the restrictive pattern, similar to our results, they also found that the involvement was related to the duration of DM and glycemic control but those studies involved only a small number of patients, and did not show the prevalence nor the patterns of lung dysfunction.

The results of our study are generally consistent with the results of these studies which demonstrated abnormal pulmonary function tests in adults with type II diabetes mellitus.

Yeh *et al.*, [16] conducted a cross-sectional and prospective study using basal and 3 years follow up data of 1000 type II diabetic patients and 10162 non-diabetic adults from the Atherosclerosis Risk in Communities (ARIC) study. At baseline, they found that type II diabetes patients had significantly lower FEV1 and FVC and significantly higher FEV1/FVC ratio than their non-diabetic counterparts. With follow up they found that FEV1 and FVC declined faster in type II diabetic patients than non-diabetic subjects.

Adeyeye *et al.*, Lagos State University Teaching Hospital, Nigeria [17] conducted a cross-sectional study using two hundred persons with type II DM [17&18]. They found that restrictive lung dysfunction is the predominant abnormality of pulmonary dysfunction in persons with type II DM, with a prevalence of 38%. They also found that 11% of the patients had obstructive pattern and 8% mixed type, while the patients with normal PFT were 43% and this was quite similar to the results of our study.

Zainab Abdulridha Akber *et al.*, [13] conducted a cross-sectional study of 63 type II DM in the department of Physiology, College of Medicine, University of Basra, Iraq. They found that type II diabetes adversely affects pulmonary function, and this impairment shows restrictive pattern mainly, similar to the results of our study, although they did not detect other patterns of involvement as in our study, they concen-

trated on the effect of airway disease, graded by the duration of diabetes, level of fasting blood sugar, and type of diabetes treatment.

In Saudi Arabia, Meo *et al.*, [6] performed a case control study on 32 men with type II diabetes and 40 non-diabetic controls, they found that diabetes patients had lower FEV1 and FVC relative to non-diabetic controls and this reduction was proportional to the duration of diabetes, but they failed to demonstrate a significant change in FEV1/FVC ratio.

All of these studies in spite of their different aims and methodology agree that patients with DM are at high risk of lung involvement, mainly of the restrictive type, as a complication, whether due to microangiopathy, inflammatory or reduced antioxidant defense.

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# PEDAGOGICAL SCIENCES

## OPTIMIZATION OF THE PEDAGOGICAL ACTIVITY OF A HIGHER EDUCATION TEACHER FOR THE PURPOSE OF PROFESSIONAL BURNOUT PREVENTION

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### Abstract

We on the cause of previous burnout analysis found that specific career and strong emotional needs, work pressure and interpersonal relationship disorder, workload, staff and job requirements is not coordinated, do not match, personal characteristics the four easy to cause burnout [1]. Most teachers in higher education work in universities, which should not only educate students and cultivate new students academically, but also play an exemplary role in the education industry. This means that higher education teachers need to deal with a huge interpersonal relationship and do a good job in their work. Preventing job burnout has become the most urgent problem for higher education teachers, and optimizing teaching activities is the best choice. This paper aims to optimize the teaching activities of higher education teachers to prevent job burnout.

**Keywords:** higher education teachers, pedagogical activity, professional burnout, mental health, optimization of the pedagogical activity, professional burnout prevention.

**Reduce unnecessary administrative tasks for teachers in higher education.** The excessive rules and regulations of the education system make the higher education teachers exhausted, only to solve the problems caused by the cumbersome administrative procedures and insufficient resource allocation under the system problems. This is also one of the reasons for occupational burnout. Higher education teachers cannot concentrate on their professional ability and creativity. In a 2018 Maccos study on the status of university teachers found that the average number of university teachers worked 48 hours a week. According to the 5 working days per week, the average daily working time is nearly 10 hours. The real weekly working hours of university teachers are more than 4 hours required by law. Twenty-two percent of the surveyed university teachers worked more than 60 hours a week. Even though the working day is Monday to Friday, some college teachers also go home according to the normal work hours, but in fact, many college teachers are still working at home, including their days off, and it is normal for them to stay up late for college teachers.

In 2015, Cornell University's then-president, Elizabeth Garrett, launched an initiative to reduce the administrative burden. As part of the initiative, the College of Arts and Sciences established a dedicated committee. The committee urged a rigorous investigation to "verify" whether the new policies and working procedures would save time and costs. The results show that the "end user" consensus:

- 1) the new program is needed;
  - 2) In general, it takes less work than the replaced workflow;
  - 3) No additional processes will be implemented.
- The administrative work involving research includes

travel, procurement, reimbursement, human resources, safety reporting, and progress reporting for funders and management organizations.

### **Increase interdisciplinary exchanges to break down academic barriers.**

In a survey of the staff of Bohai University, we found that. Most higher education teachers believe that one of the most effective teaching activities to prevent job burnout is to increase interdisciplinary communication and break down academic barriers. The traditional academic system leads to the poor communication between disciplines, and limits the exchange of knowledge and the development of interdisciplinary research. This is undoubtedly fatal to the academic blow of higher education teachers. In teaching guidance, academic research and management service, higher education teachers show the characteristics of professional activities of university teachers, which are different from other industries, and pay more attention to academic development and breakthrough experience. However, in real life, research is often mixed with various phenomena and changes, which means that higher education teachers need to find breakthroughs in multiple disciplines. Increasing interdisciplinary communication can not only provide innovative thinking and also increase the enthusiasm of higher education teachers for scientific research.

### **Increase the professional development opportunities for teachers and pay attention to mental health and safety.**

The particularity of the professional activities of teachers in higher education is a complex process, which includes not only cultivating students' personal quality and academic ability, but also shaping the of

teachers' self-quality [2]. We find that in the current social situation, many higher education teachers lack opportunities for professional development, and the unfinished shaping of self-quality and other academic pressures have a negative impact on teachers' mental health, which leads to the decline of work efficiency and happiness of higher education teachers, and then affects the teaching quality and students' development.

Increasing the professional development opportunities for teachers can not only provide high-quality teacher groups for higher education institutions, but also bring about changes to student development. At the same time, mental health and safety cannot be ignored, because psychological problems not only involve work, but also to the family and society. Mental health is generally to adapt to the environment and emotional performance, the opposite will appear adverse effects. Prevention of psychological problems can effectively improve negative emotions and create a positive educational environment and work environment. Institutions of higher education should regularly promote mental health related knowledge and ideas, mental illness related knowledge and ideas, promote their mental health attitude and habits [3].

### Conclusion

Optimizing the teaching activities of higher education teachers can prevent job burnout. The education reform of higher education institutions should not only be used in how to train students, but also pay attention to teachers. Higher education teachers, as students and other ties, are crucial.

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# PHILOSOPHICAL SCIENCES

## FORMATION OF NATIONAL PATRIOTIC CONSCIOUSNESS IN THE CONDITIONS OF FULL-SCALE WAR AS A FACTOR OF THE UNITY OF UKRAINIAN SOCIETY

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### Abstract

The article analyzes the process of formation and development of national-patriotic education in Ukraine and its role in consolidation of Ukrainian society in terms of a full-scale Russian-Ukrainian War. The following general scientific methods were used during the studies: analysis, synthesis, deduction, induction and generalization. There can be also highlighted the principles and following aspects of patriotic education: social, educational, protective and cultural. Modern Ukrainian society needs consolidation, in particular through the national-patriotic education, as it has not yet encountered such a threat to national security and sovereignty as is currently represented by armed Russian aggression. The authors substantiate the need for such education and provide certain recommendations regarding its effective development. The practical significance of the received scientific results is that they can be used for the development of educational initiatives and civil development programs by authorized institutions in order to raise the level of national consciousness of society.

**Keywords:** National-Patriotic Education, Ukrainian Society, Youth, Unity of Ukrainians, Young Generation, Volunteering.

### Introduction

For a long time, Russia (hereinafter referred to as the Russian Federation) continues a hybrid War against Ukraine, using various tools and means of influence, including information propaganda and Information & Psychological Operations (IPsO), which are aimed at Ukrainian society, especially the young generation. For a long time, the state did not actively protect the national ideas and values of citizens, and did not pay enough attention to national-patriotic education. However, after the beginning of the Russian-Ukrainian War in 2014, the rapid development of that area has started with the efforts of citizens and activists. There was an intensification of national-patriotic movements and organizations aimed at supporting Ukrainian national identity, such as volunteer battalions and public associations that assist the army and local communities in the affected territories. Among children's and youth organizations, it was "Kozachata" [5], "Plast" [28], "Union of Ukrainian Youth" [38]. The "Phoenix Wings" should be noted among volunteer organizations [35], "The People's Project" [27], "Come Back Alive" Foundation [6]. The popularity of patriotic media projects that oppose Russian propaganda and disseminate objective information about events in Ukraine has also increased. However, the insufficient level of attention to national-patriotic education can undermine society's ability to effectively confront Russian aggression. Today, it is important not only to continue the national-patriotic movement, but also to involve broader population, in particular ordinary citizens, therein. Awareness of self-identity and common values will contribute to the effective consolidation of society and resistance

to hostile influences, which will allow creating a single information front line in the defence of national interests during the War.

As emphasized in the Decree of the President of Ukraine dated December 1, 2016 No. 534/2016, "patriotic and spiritual education of the younger generation will ensure the integrity of the people of Ukraine, its national revival, unification of different ethnic groups and regions of the country, socio-economic and democratic development of Ukraine..." [10].

The relevance of the study lies in the need to investigate modern national-patriotic education in Ukraine in detail for its development and wider spread, in particular through state and civil initiatives.

### Review of sources and literature

Certain aspects of national-patriotic education have already been covered in a number of works of domestic scientists. In particular, I.D. Bekh, L.V. Kaniševska and R.V. Malynoshevskiy consider the priorities of military-patriotic education of children and youth in terms of the Russian-Ukrainian War and after it, developed by the Institute of Educational Problems of the National Academy of Educational Sciences of Ukraine, covering institutional, infrastructural, socio-cultural and educational aspects, as well as methodical approaches and principles of modern military-patriotic education, such as de-Russification, national orientation, educational process humanization, consolidation etc [2]. O. Haziova, L. Sorochuk and A. Kononenko, analyzing the practical experience of teachers of the introduction of Ukrainian studies into the system of national-patriotic education, emphasize the growing interest of many Ukrainians in the history of Ukraine, the

Ukrainian language, literature, and cultural heritage at the current stage. Therefore, the extremely responsible mission of teachers today is to educate the future political elite who will be ready to defend the importance of the Ukrainian language, history and culture, thereby affirming their national identity [15]. N. Bondarenko in his article emphasizes national identity as a key tool for countering the Kremlin's influence, considers the ideas of Ukrainian intellectuals and the possibility of using them to improve the system of national-patriotic education [4]. The studies of O.V. Skrypniuk and Y.F. Zhovnirchuk describe theoretical and practical aspects of the state policy of Ukraine for patriotic education of youth, taking into account the current state and development prospects, a theoretical analysis of the concepts of "patriotism" and "education" was carried out [33]. The monograph of O. Rafalskyi, Ya. Kalakura, O. Kalakura and M. Yurii is interpreted the Ukrainian civilizational identity, attention is focused on the importance of a deep understanding of the historical, philosophical, sociological and cultural aspects of that concept in all its complexity and diversity. This makes it possible not only to consider the historical roots of the civilizational identity of Ukrainians, but also to understand its current state and significance for Ukrainian society, areas in which the popularization of that concept will make it possible to influence patriotic education positively [30].

We also used the Laws of Ukraine [19; 20]; strategies in the security field, approved by the relevant decrees of the President [22; 11]; statistical data of the National Security and Defence Magazine [44]. The analysis of those materials made it possible to obtain a comprehensive vision of Ukrainian national-patriotic education in terms of full-scale armed aggression of the Russian Federation.

A lot of studies conducted in the field of national-patriotic education do not take into account the aspects of gender equality, the possibility of using innovations in the educational process, as well as the development of tolerance and a culture of dialogue. However, the most urgent problem that remains outside the attention of research fellows is the actual implementation of the main goal of patriotic education, that is, the consolidation of Ukrainians as a single nation. Therefore, the main goal of that study is to determine the role of national-patriotic education in the process of uniting Ukrainian society in terms of full-scale aggression of the Russian Federation.

The modern Russian-Ukrainian genocidal war caused an increase in the unity of Ukrainian society, which was a consequence of the appearance of an external common enemy and the need to confront the same. The uniting is manifested in the consolidation of efforts to fight the enemy, faith in the Armed Forces of Ukraine, negative emotions towards the Russian Federation. This commonality of goals and views strengthened the tendency to consolidate representatives of various social groups and reduce differences in their political views and values. At now Ukrainians are going through many common experiences, which creates a common context of life for people regardless of their

place of residence, forms a common historical memory, contributes to the occurrence of a sense of unity.

Today, a number of summarizing works on the life of society, collisions of its development and future have been published. The works of V. Andrushchenko [1] consider the general problems of organization and social self-organization during the period of transformations in Ukraine at the end of the 20th and the beginning of the 21st centuries. O. Rafalskyi [29] characterized the socio-political processes in Ukraine in terms of the Russian-Ukrainian War and assessed the consolidation potential of the image of the future of Ukraine, and the scientists of the Center of Ukrainian Studies of T. Shevchenko National University of Kyiv, researching the consolidation of Ukrainianness in the post-colonial era, notes that the research material, which is largely relevant to our present day, "constantly undergoes variations and is filled with new phenomena and senses" [8]. The collective monograph of the scientists of the Institute of Sociology of the National Academy of Sciences of Ukraine [37] considers the global and local aspects of the war, the transformation of the institutional and social-group structure, shifts in the attitudes, expectations, value orientations of citizens, and the socio-psychological state of the population. V. Kryshchenko's articles highlight Moscow's aggressive policy towards Ukraine, which can be qualified as a policy of genocide, consider the problems of the consolidation of Ukrainian society, in particular the dividing lines in Ukrainian society that affect its ability to self-organize and develop [39; 40, 41]. T. Tsybmal emphasizes that consolidation under crisis conditions should be greater than in normal ones, and it also implies unity with other countries that support the common civilizational vector of our country's development. The author claims that, taking into account the crisis state of Ukrainian society, the conditions of the "hybrid" war, Ukraine today needs to strengthen social consolidation, the level of which has decreased slightly [36]. Foreign scientists L. Dion, J. Craige, E. Gellner analyze "full-scale" nations as a guarantee of social harmony. T. Gran, N. Darchevska, E. Wilson trace the peculiarities of Russia's modern expansionist policy, in particular its influence on Ukraine [43]. The use of the world experience of the study of the consolidation of society is complicated by the peculiarity of the genocidal war of the Russian Federation against Ukraine, its security threats in view of the possession of a huge arsenal of nuclear weapons by the Russian Federation.

#### **Materials and methods**

There were used the following methods to conduct studies: analysis, synthesis, comparison, interview, deduction, induction and generalization. The method of analysis was used for a detailed review and critical thinking of scientific and statistical data related to patriotic education in terms of war. Its application not only made it possible to consider the information received, but also to find out the interaction between various aspects of the above education and the events taking place in Ukraine. The analysis was effective in identifying the key factors influencing patriotic education in terms of war, and contributed to highlighting the main trends in that area. That approach made it possible to get a more

detailed understanding of the role of patriotism in consolidation of society and preservation of the identity of the Ukrainian nation during the conflict. At the same time, the synthesis in the study was applicable for combining and systematizing various information and aspects of patriotic education. Also, by synthesis, different approaches to patriotic education were taken into account, which made it possible to understand how certain aspects of patriotic education interact with each other and influence the formation of national consciousness and readiness to defend the state. The comparison was used to study statistical data related to sociological surveys for different years. Based on that method, there were created the appropriate tables that visualized the differences found between various parameters.

The interview method was used to collect empirical information on patriotic education. This method made it possible to obtain data on the attitude of ordinary citizens to certain aspects in that area. There were conducted the interviews with random citizens of different ages and genders, with their verbal consent, on city streets, in parks, and shopping malls. A total of 750 interviews were conducted during the month. In order to ensure representativeness, there were chosen the citizens for interviews: male (350) and female (400), from three age groups: youth (14–35 years old, 350 people), adults (35–60 years old, 300 people), people elderly (from 60 years old, 100 people). In turn, there was used the deduction to derive general principles and regularities of national-patriotic education from specific observations and analysis of facts obtained during the study. Further, the use of deduction made it possible to consider in more detail the logical connections between various aspects of national-patriotic education and its influence on consolidation of the civil society and formation of a patriot's personality. Induction was used to formulate hypotheses and make assumptions about possible cause-and-effect relationships in patriotic education during the armed conflict, as a factor capable of uniting Ukrainian society. Further, this method made it possible to identify new areas for studies in the field of patriotic education. Generalization was used to formulate general conclusions and recommendations based on the obtained study results. The application of generalization made it possible to systematize and combine the obtained data, highlight their meaning and impact on processes in society. By way of generalization, there were also summarized the key results and conclusions that were made during the study, on the basis of which recommendations were formulated for the improvement of patriotic education in order to increase the effectiveness of that process in modern conditions.

#### **Basic material presentation**

The present period of existence of independent Ukraine is one of the most difficult in its recent history, due to various political, economic and social challenges caused by the full-scale armed aggression of the Russian Federation. The war aimed at the occupation or destruction of Ukraine and intensive propaganda became a serious test for Ukrainian society, violating territorial integrity and national identity. Within such a situation, patriotic education of youth is recognized as key for the

development of the country and its national security.

Patriotism is an important component of national and social development and means that a person feels respect and love for the state in which he/she was born or lives. Patriotism contributes to the formation of public unity, unites society and encourages people to support and build state institutions, performance of civic duty. Patriotic feelings can arise from a variety of factors, such as history, culture, language, traditions and shared values, the importance of protecting freedom, democracy and human rights within the country. Patriotism has the potential to unite different social and cultural groups around common goals and ideals, which contributes to the maintenance of social unity and the development of the country [26]. At the same time, national patriotism or nationalism is a complex ideology and socio-political movement defined by the shared desire of a community's members, often sharing common features such as culture, history, language or ethnic origin, to create or maintain their/our own nation-state. It includes a wide range of feelings, from the maintenance of national identity and cultural heritage to the desire for political autonomy and sovereignty. Nationalism can arise as a reaction to historical events, external pressures, or perceived threats to a group's identity or autonomy. It often manifests itself in a sense of solidarity among the members of the nation, which pushes them to preserve and develop their unique identity, traditions and interests [23].

State policy in the field of national-patriotic education is an important factor that determines the quality and success of that process, and from the state of which the development of national self-awareness of the youth, their readiness to defend the state occurs. The patriotism of Ukrainians is one of the components necessary to achieve self-sufficiency and independence of the state in the world, and in present circumstances of a full-scale war between Ukraine and the Russian Federation, the state's policy in the field of education of youth as patriots turns out to be paramount in matters of national security.

Further, due to the terrorist attacks of the Russian Federation aimed at the civilian population, the creation of conditions for the occurrence of environmental and man-made disasters, as well as the mass mining of the temporarily occupied territories of Ukraine, an important task is to educate the young generation in the necessary safety habits. This includes developing effective behavioral patterns while in combat zones, studying the course of actions in case of emergency situations and increased information about mine danger in the de-occupied territories. Paying attention to the terrorist nature of the enemy's actions makes it obvious the need to systematically educate citizens to take responsibility for their own safety and the safety of others [2, p. 3]. However, in addition to the development of security skills, national-patriotic education is aimed at promoting self-awareness and self-identification of Ukrainians, forming a positive world perception, establishing a patriotic worldview. The key aspects of patriotic education are a full and comprehensive understanding of personal civic duty, confidence in actions aimed at the protection and development of Ukraine.

An essential part of national-patriotic education is the development of interest in the history of the Ukrainian people and the military traditions of the Armed Forces of Ukraine. The task of such education includes the formation of a responsible public position and conscious social activity of Ukrainians. The development and implementation of national-patriotic education involves not only the development of patriotic values, but also the creation of self-improvement conditions and the formation of a personality as a patriot [4, p. 4].

#### **Goal, tasks and areas of national-patriotic education at the present stage**

According to scientists from the I.F. Kurash Institute of Political and Ethnonational Studies of the National Academy of Sciences of Ukraine, the process of forming national, civil, religious and civilizational identity takes place throughout the life of an individual. This process begins with upbringing in the family and receiving general education, which is the main component of the continuous education system. Its main areas include civic, political and cultural socialization, the formation of a scientific outlook, democratic and legal culture, as well as active participation in public life, which contributes to the development of both the individual and society [30]. Involvement in this process of patriotic education makes it possible to bypass negative social phenomena, increase the general historical and cultural awareness of Ukrainians and the level of their consolidation. It is important to emphasize that patriotism, as a complex of feelings, is highlighted through intellectual, emotional and volitional components. An individual's sense of value in relation to a specific concept, person or phenomenon pushes him/her to act, forming motivation. Patriotism combines an emotional, effective and valuable attitude to various aspects of life, such as the state, nature, nation, national history, as well as material and spiritual achievements of society. In turn, the modern process of socialization, which is studied by social pedagogy, has a characteristic feature – its transformational nature in terms of a change in the social context. Situations that seemed typical for certain conditions can suddenly vary in the perception of citizens, especially in the situation in which Ukrainian society is now. This is especially appearing in the context of patriotism, which is an important aspect of socialization and interaction of the individual with society. Patriotism as a component of political culture affects an individual's attitude to the history, traditions and worldview of his/her country, forming his/her political identity. The structure of patriotic standards to be formed in the process of socialization determines the orientation of the individual in the "friend of foe" social system. These mechanisms can also influence the formation of attitudes towards large social groups, ethnic groups, foreign countries and other aspects at the macro level. A high level of patriotism determines an individual's political attitude towards the main political institutions of the state, the management system and personal active participation in political life. Moreover, patriotism actively mobilizes individuals, social groups and society as a whole to form political beliefs that cover various aspects of social life. The important influence of patriotism is also manifested in the formation

of political stereotypes that determine the specifics of society. As patriotism is an important factor in socialization, it influences the behavioral patterns of individuals, thus having a significant potential to promote effective socialization of children and youth, especially within the context of youth and education policy.

The goal of national-patriotic education is as follows: deepening national self-identification and awareness of the Ukrainian people as an independent and equal European nation; supporting love for the Ukrainian language, history, traditions and culture; transfer of knowledge and values by way of personal experience and active cooperation between generations through educational projects, cultural events and family discussions; formation of a citizen-patriot of Ukraine, capable not only of protecting, but also actively contributing to the development of the country as an independent and democratic state; increasing awareness of the constitutional rights and duties of citizens, using available educational and informational resources; contribute to the unification of the Ukrainian people, promoting dialogue and mutual understanding between different social groups and regions of the country, in particular through the development of intercultural and interregional cooperation. The implementation of this goal takes place by way of introduction of appropriate measures aimed at strengthening the national-patriotic consciousness of children and youth, commemorating the heroes of the struggle of the Ukrainian people for independence and territorial integrity, popularizing the national spiritual and cultural heritage and strengthening the unity and consolidation of Ukrainian society.

Among them: conversations, hours of remembrance, round tables, meetings of children and youth with participants in the Russian-Ukrainian War, volunteers, exhibitions in educational, cultural institutions, cultural information and educational projects aimed at popularizing the historical past of the Ukrainian people, preserving national cultural artistic traditions of Ukrainians, overcoming stereotypes and propagandist myths aimed at destroying the unity of the Ukrainian people, as well as holding competitions for school and student works on the issue of heroism of Ukrainian soldiers, displaying courage and bravery by them.

Therefore, the ideas of protection and love for the state, as well as preservation and nurturing of national memory and culture are recognized as key components of patriotic education. Consolidation of such ideas in society not only contributes to the formation of national consciousness, but also provides a strong foundation for the development of a civic position and active participation of citizens in the life of the country.

It should be noted that national-patriotic education is based on the following principles: national orientation, heredity of ideas, self-activity and self-regulation, social responsibility, historical and social memory, multiculturalism, humanization. The principle of national orientation is determined by the education of love for the state and the formation of national self-awareness. The principle of self-activity and self-regulation contributes to the development of the civic position of the individual and its ability to critical thinking and

self-evaluation. The principle of multiculturalism provides for the integration of Ukrainian culture among European ones. The principle of social responsibility consists in the correspondence between the national-patriotic education and real social challenges and the readiness to stand up for the defence of the state. The principle of historical and social memory provides for the preservation of cultural and historical heritage of the Ukrainian people. The principle of heredity of ideas is aimed at preserving samples of Ukrainian culture for future generations. The principle of humanization pays attention to the individual as the highest value.

The role of national-patriotic education is that it can be used as a means of supporting the Ukrainian state and the national movement, as well as forming ideas about Ukrainian nationality. By carrying out reforms in the field of education, there are taken measures to cultivate the Ukrainian identity, which also manifests itself in the strengthening of the state's defence capabilities. By promoting a sense of unity among the population, initiatives in the field of patriotic education contribute to ensuring national security. In effect, the education sector is becoming an extension of security efforts, developing curriculums to address national security issues and raising citizen awareness of national, local and individual security among the younger generation [13; p. 107].

The education system, as well as the activities of sports and patriotic clubs, have a great influence on the solution of tasks set before national-patriotic education in the state. In general terms, the educational institutions, implementing patriotic education, play a key role in the formation of patriotism and familiarization of the young generation with the political and national values of the state. Through specially developed curriculums, educational institutions aim to educate talented individuals who feel a deep emotional attachment to the state

where they were born or live. This goal is aimed not only at reducing ideological polarization between different racial and national groups, but also at socializing young people to accept the generally accepted values of society. By instilling patriotism, educational institutions contribute to the strengthening of social unity and counteract global anti-national influences [45, pp. 23–26].

The military-patriotic education of pupils, students and cadets is also particularly important, which is a necessary component of national-patriotic education. Such education is aimed at encouraging young people to preserve the security of Ukraine and the formation of moral qualities necessary for the defence of the state, encouraging them to choose a military career. As a general rule, the younger generation is involved in military-patriotic education. It should be noted that military-patriotic education is definitely part of the country's national security system and is a key element of the new generation humanitarian education. This is an important component aimed at the formation of patriotic feelings in them, as well as the maintenance of physical and moral health, the development of educational, physical, psychological, social and moral-spiritual aspects of readiness for military service. The main worldview ideas of military-patriotic education are universal and humanistic values that draw the individual's attention to the principles of democracy and humanism during its formation and development. In particular, the criteria for the effectiveness of military-patriotic education are the level of patriotic readiness of students, as well as indicators in various areas, such as education, physical fitness, psychological stability, social interaction and moral-spiritual readiness for military service. In this way, it is possible to single out and systematize the components of effective implementation of patriotic education (Table 1).

Table 1.

Components of Effective Implementation of National-Patriotic Education

|                                                                          |                                                                            |                                                                 |                                                    |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------|
| Destruction of Anti-Ukrainian Stereotypes and Narratives                 | Cultivating a Polite and Tactful Attitude Towards Oneself and Others       | Age Category Consideration                                      | Paying Attention to Regional Features              |
| Combined Collective and Individual Approach                              | National-Patriotic Education                                               |                                                                 | Careful Information Base Development               |
| Clarifying the Concepts of Sustainable Development and Healthy Lifestyle | Drawing Attention on the Identity and Independence of the Ukrainian People | Getting Acquainted with Heroic Periods in the Ukrainian History | Selection of the Most Prominent Historical Figures |

Source: *Materials of Study Conducted.*

It is this comprehensive approach that can create interest and respect among young people for a patriotic way of life.

Since Ukraine regained its independence, there has been a change in the official position of the government in the eastern and southern regions of the country, but the implementation of patriotic education initiatives through hasty bureaucratic measures, often without taking into account the preferences of the local population, has become an important factor in the growth of social stratification. To solve this problem, on April 3, 2006,

there was formed a working group on patriotic education of youth in terms of the National Security and Defence Council. The goal of the group was to promote the development of a national concept of patriotic education of youth. The group included leading experts from various governmental bodies of Ukraine, including the Ministry of Youth and the Ministry of Education, as well as representatives of NGOs, youth organizations, creative intellectuals and recognized scientists. Moreover, the group collaborated with a wide group of national theorists and practitioners who specialize in

youth education. This joint work aimed to ensure an inclusive approach and respond to the diverse needs and views of Ukrainian youth. [25, 28.03.2019].

The next stage in the development of the Institute of Patriotic Education in Ukraine was the adoption on March 26, 2015 of the Concept of National Patriotic Education of Children and Youth for the period 2015–2019 by the Ministry of Education and Science of Ukraine, which provided for several stages of the implementation of relevant initiatives. At the first stage (2015), attention should be paid to the establishment of legal support and the creation of an informational and methodological base for national and patriotic education. Moreover, there was foreseen the creation of a Center for Patriotic Education and an information resource on national and patriotic issues. The second stage (2016–2017) provided for the development of curriculums and materials for various levels of education, as well as scientific and methodological manuals to support the training and work of clubs and centers engaged in patriotic education. The last stage (2018–2019) provided for the monitoring of the patriotic education system through sociological studies and scientific and methodological conferences, as well as the adjustment of pedagogical approaches based on the obtained results [25, 28.03.2019].

In 2015–2021, there were also approved the “Strategy of National Patriotic Education for 2016–2020” (Decree of the President of Ukraine dated October 13, 2015 No. 580/20152015), the “Concept of National Patriotic Education in the Education System of Ukraine” (Decree of the Ministry of Education and Culture of Ukraine No. 1038 dated July 29, 2019), the document “On the Strategy of National Patriotic Education” (Decree of the President of Ukraine dated May 21, 2019 No. 286/2019). At the same time, in 2021, there was adopted the Military Security Strategy of Ukraine [22], approved by the Decree of the President of Ukraine No. 121 dated March 25, 2021 [11], which also discussed the development of national and patriotic education. In parallel with these measures, civic initiatives appeared, such as the proposal of the Institute of Human Self-Development “Samriti” to introduce the textbook “Course of a Young Patriot” into the educational process, which takes into account psychological and emotional aspects in education.

In order to effectively integrate the military-patriotic education of the young generation into the education system, the National Academy of Pedagogical Sciences of Ukraine has the opportunity to perform a number of tasks in the short- and long-term perspective. These tasks include the development of a military-patriotic education methodology for use by educators, conducting empirical research to develop an innovative approach to the formation of certain moral qualities in the young generation. The development of pupils' competences in the field of safety is also determined to be important. To achieve the set goals, the academy plans to substantiate the scientific-theoretical and methodical principles of military-patriotic education of high school pupils, taking into account the actual experience of national resistance. In addition, it is planned to conduct monitoring studies to determine the level of formation

of defence consciousness among educators and their achievements in the field of security [2]. It is also worth noting that in a number of laws and regulations, such as the laws of Ukraine “On the Basic Principles of State Policy in the Field of Building Ukrainian National and Civil Identity” (2022) [19]. “Law of Ukraine “On the basic principles of state policy in the sphere of establishing Ukrainian national and civil identity” dated 13. 12.2022 No. 2834-IX) and “On the Fundamentals of National Resistance” (2021) [20], as well as in the concepts and programs focused on the organization of national resistance in order to counteract the full-scale aggression of the Russian Federation, there was determined the need of increasing the defence potential of the state. These documents also emphasize the cohesion of society, the military-patriotic education of citizens, as well as the readiness of the population to defend the state under the conditions of the armed aggression of the Russian Federation against Ukraine. Also, on February 14, 2022, the Day of Unity was introduced to strengthen the consolidation of Ukrainian society and increase its resistance to hybrid threats, information propaganda, as well as moral and psychological pressure on public consciousness. Holding the Day of Unity is the duty of state institutions, which, in accordance with the Law of Ukraine “On Urgent Measures for the Consolidation of Ukrainian Society”, shall raise the State Flag of Ukraine on buildings and structures in all populated areas on February 16 of each year. There was provided for the performance of the National Anthem of Ukraine at 10:00 a.m. It is also provided for the organization of appropriate measures aimed at strengthening unity and support of Ukraine in diplomatic missions of Ukraine abroad [12].

The formation of civil society, strengthening of historical and cultural awareness of citizens, as well as the formation of a patriotic worldview therein can be identified as separate aspects of national-patriotic education. A developed civil society is important for the functioning of the state, especially a democratic one, and therefore in modern political science there are two theories of the essence of civil society. The first theory considers civil society as a social universality, which is a set of social relations opposed to the state in any of its forms. The second theory defines civil society as a certain phenomenon, which is an effective form of existence of a democratic society related to the formation of a citizen with his/her own freedoms, rights and duties. In the modern definition of civil society, the most widespread is the idea thereof as a system of social associations and relations between individuals separated from the state. This system creates conditions for self-realization of individuals and collectives in various areas of society, uniting activists with high moral qualities. In turn, understanding the history, values, symbols and identity of the Ukrainian people requires the development of modern Ukrainian cultural studies. It is important that cultural studies got sufficient support and encouragement from the state, and access to modern literature, research tools and databases that contribute to the development of cultural studies in Ukraine should always be open to education applicants and research fellows. The formation of a patriotic worldview in the

younger generation is also crucial for ensuring the stability of state institutions during the war, which is achieved due to effective patriotic education combined with preservation of the traditions and culture of the people.

We conducted a survey regarding paying due attention to national-patriotic education by the state in Ukraine as a whole and in educational institutions in particular. Its results are given in the table (Table 2).

Table 2.

Interview on Patriotic Education

| Question                                                                                         | Yes   | No    | It is Difficult to Answer |
|--------------------------------------------------------------------------------------------------|-------|-------|---------------------------|
| How do you think enough attention to patriotic education in Ukraine is paid by the state?        | 52%   | 11,5% | 36,5%                     |
| How do you think more attention should be paid to patriotic education in Ukraine?                | 74,3% | 5,7%  | 20%                       |
| How do you think patriotic education should be given more attention in educational institutions? | 78,4% | 14,2% | 7,4%                      |

Source: *Materials of Survey Conducted.*

Thus, the conducted interview points out that, according to the majority of interviewed citizens, more attention should be paid to patriotic education than it is currently. At the same time, most of the respondents do not see the fault of the state as a whole in this, but only of certain of its social institutions, which are educational institutions.

However, not only youth representatives need patriotic education, but also civil servants, in particular in the bodies of the security and defence sector of Ukraine. It is necessary to focus attention on improving the quality of personnel support at all stages: from the selection of personnel to their study, professional training and retraining. Special attention should be paid to

aspects of motivation, compliance with professional requirements, patriotic education of employees and improvement of their practical skills [12] (Reznikova O. O., 2022). Such a position once again confirms not only the very existence, but also the importance of the security aspect of patriotic education. Another confirmation of this is statistical data, which should also be considered as the result of active patriotic education. Thus, according to experts of O. Razumkov Ukrainian Center for Economic and Political Studies, in sociological studies, readiness to defend the state is one of the greatest indicators of patriotism. The Center also provides the results of sociological surveys on other indicators and issues (Table 3).

Table 3.

Comparative Table of Sociological Surveys

| Answer to a Question or Position                                   | 2011 | 2020 | 2022 | Dynamics (% per year) |
|--------------------------------------------------------------------|------|------|------|-----------------------|
| Willingness to defend our country                                  | 40%  | 57%  | 71%  | from +1,88% to +7%    |
| What is more important - freedom or equality? (freedom was chosen) | —    | 64%  | 71%  | +3,5%                 |
| What is more important - freedom or security? (safety was chosen)  | —    | 66%  | 56%  | -5%                   |

Source: *statistical data from the article of the National Security and Defence Magazine* [44, p. 13].

With the beginning of the Russian full-scale invasion in February 2022, the trend in the readiness of Ukrainians to defend the Fatherland changed. If in 2011, 40% of Ukrainians answered affirmatively to the question of readiness to defend the country, in 2020 – 57%, and according to the sociological survey conducted by the Razumkov Center from May 23 to 31, 2023 – 67%. In particular, the majority of the population of all its regions are ready to defend Ukraine: 61% - in the East, 67% - in the Central regions, 68% - in the Western regions and 71% - in the South of the country. Among them, 74% are men, 60.5% are women. Regarding age, from 18 to 59 years old - from 68% to 75%, 60 years and older – 51% [46].

The survey covered 2,020 people aged 18 and

over. The theoretical sampling error does not exceed 2.3%. At the same time, additional sample deviations are possible due to the consequences of Russian aggression, in particular the forced evacuation of millions of civilians. It was conducted by the method of stratified multistage sampling with random sampling at the first stage of sample formation and quota selection of respondents at the last stage. Respondents were selected by gender and age quotas in accordance with the demographic composition of the adult population of the studied regions at the beginning of 2022 [46].

Thus, the following trends can be distinguished: the readiness to defend Ukraine has increased rapidly due to a full-scale invasion, freedom is gradually becoming the greatest value for citizens, since it was the

Russian Federation that encroached on it by starting armed aggression.

Modern national interests of Ukraine and strategic goals in the formation of a new political system of the nation pose special tasks to educators in the field of national-patriotic education. Patriotism, as an important component of sociocultural identity, is expressed in devotion to the state and people, readiness to protect their interests from external and internal threats. Effective national-patriotic education involves the development of civic-patriotic, military-patriotic and spiritual-moral components. Such education is one of the important areas of the state policy in young generation education, aimed at the formation of national consciousness based on the values and ideals of the Ukrainian nation. Thus, the modern national interests of Ukraine and strategic goals in the formation of a new political system of the nation place a special emphasis on the national-patriotic education of pupils. Once again, attention is drawn to the fact that national-patriotic education involves the development of the main components: civil, military and spiritual. However, it is worth emphasizing that such education becomes effective only when these components are skillfully combined. That is why patriotic education is one of the priorities of state and public policy, focused on the formation of national consciousness, patriotic personality of a citizen and promoting the education of the young generation based on the values and ideals of the Ukrainian nation.

#### **The volunteer movement is an important factor in the unity of ukrainian society**

The consolidation of Ukrainian society is manifested in the common goals, interests and actions of all citizens, in particular in the establishment of partnership relations between the main social groups, social support of the population by the authorities, active participation of citizens in the interests of the city, region, and country as a whole organism. Unity itself is an important factor that helped Ukraine resist and restrain the enemy when it tried to break into the approaches of the capital, and today it helps step by step to de-occupy Ukrainian territories in the South and East of the country.

One of the important factors of the unity of Ukrainians and the formation of national and patriotic feelings among young people is their volunteering. Volunteering for schoolchildren is an inexhaustible source of energy for acquiring civic education, learning and contributing to the development of the consolidation of Ukrainian society, an opportunity to realize oneself in service to the same. During the difficult time of war for Ukraine, volunteers help our soldiers as much as they can. In particular, they participate in the production of camouflage nets, online challenges "Together to Victory", write letters to the defenders, expressing their moral support, supply them with medicine, food, personal hygiene products etc. For this purpose, charity fairs and other actions are held in schools, the collected funds are transferred to the purchase of everything necessary for the Armed Forces of Ukraine. As an example, at the end of February 2024, pupils of Bucha Community in Kyiv Region held a charity fair for two days to support the Ukrainian military. Thanks to the sale of

goodies, seven schools of this community collected UAH 436,820 for the Armed Forces of Ukraine. Pupils of Bucha Gymnasium No. 2 and Lyceum No. 9 also raised funds for kamikaze drones for military purposes. The drones were handed over to the fighters of the 63rd separate mechanized brigade in Lyman direction [34].

In Kropyvnytskyi there is an alternative school "KrOK", whose pupils know what volunteering is not from books or social networks. They regularly visit the local animal protection organizations "BIM" and "Happy Dog", have repeatedly volunteered at the locations of running marathons, organize charity events and flea markets, safety workshops. Starting the second day of the full-scale invasion, they began weaving camouflage nets for the AFU here. Both children and parents gathered in the sports hall.

Almost from the first days of the war, Bar schools (Vinnytsia Region) also joined volunteer activities. Someone prepared food for the military and displaced persons, somewhere there was a warehouse for food and humanitarian aid, and somewhere there was an overnight reception point for displaced persons traveling in transit. From the beginning of the full-scale invasion of the Russian Federation into the territory of Ukraine, the kitchen of the Bar Lyceum No.2 became a place for preparing various dishes for Ukrainian defenders and immigrants. Local volunteers accepted products for the formation of consignments for the AFU in the premises of the educational institution, and at the beginning of the war the local authorities accepted humanitarian consignments from sister cities, etc.

Good deeds, which start from school years, educate children to understand the feelings and needs of others, the ability to accumulate experience of social interaction and communication. Young people should engage in charity, as it helps them to see different aspects of good, allows them to accumulate experience of social interaction and communication, and forms value and moral guidelines in schoolchildren.

Due to social activities, young volunteers acquire practical life goals, experience, master the art of life creation, self-development of personality.

The traditional curriculum is mainly focused on the passive consumption of a large amount of information. Instead, through volunteering, an active position of the child is formed, who becomes a participant in the processes, nurtures a sense of responsibility for what is happening. Volunteerism forms a conscious society in which most citizens are successful. Today, the actions of Ukrainian volunteers and ordinary people led to a rethinking of charity in the world, and the volunteer movement plays one of the key roles in this terrible war.

Thus, national-patriotic education is an activity of the state and activists, aimed at the development and spread of patriotism among the population of the state, in particular, the youth, to support identity and historical & cultural independence, preservation of national memory, as well as the development of patriots as healthy, cultural and educated individuals who are morally and physically capable of defending the state if needed. The main principles of national-patriotic edu-

cation should include: state-wide obligatory implementation, personal voluntariness of involvement, highlighting of historical truth, cultural and physical development of a patriot. The main aspects of national-patriotic education are: social, educational, protective and cultural. The social aspect of patriotic education is determined by the possibility of qualitative identification of an individual in society as a patriot through the individual's active part in such education or its implementation or organization. The communicative aspect is manifested in the positive influence of this activity on the formation of personality from the point of view of the basic principles of proper behaviour of a well-educated person and the basic skills of polite social communication. The protective aspect is directly related to the relevant readiness of the patriot, which includes both physical and moral components, to protect Ukraine. The cultural aspect is expressed in the cultural and educational influence of patriotic education, which is carried out by introducing students to important historical figures of the Ukrainian national and cultural revival, heroic pages from the history of Ukraine and outstanding works of Ukrainian classical literature.

The need to develop a system of national-patriotic education is caused by the following factors: patriotic education can unite society and direct its efforts to the defence of Ukraine; such education is a qualitative response to the propaganda of the Russian Federation; while nurturing national identity, patriotic education is designed to promote the protection of Ukrainian history, culture and traditions.

Within modern Russian aggression, the system of national-patriotic education needs revision, improvement and strengthening. Among the main measures: improvement of the regulatory and legal framework regarding national-patriotic education; participation in national-patriotic education of local authorities and local self-government; creation of interschool resource centers, socio-pedagogical conditions for the implementation of national-patriotic education; modification of the content and forms of national-patriotic education; organization of information and educational work in the field of national-patriotic education etc. [3, p. 24].

We also consider it necessary to express certain proposals and recommendations regarding its improvement and development of national-patriotic education. **First**, patriotic education should become obligatory at all levels of education, have specific, standardized programs approved by the Ministry of Education and Science of Ukraine, and should be provided with the necessary number of hours, which, according to the resolution of the expert commission of the ministry, will be sufficient for the effective conduct of patriotic education in each age category of schoolchildren, cadets and students. **Second**, patriotic education should be implemented not only through educational institutions, but also through national mass media, patriotic communities and centers, social media in order to achieve the maximum coverage of the audience, since patriotic education should be carried out for all citizens of Ukraine. **Third**, patriotic education should receive proper support from the state book publishing house, which should not only print and sell patriotic literature, but

also act as the initiator of its creation.

### Discussions

As it was found out, the main aspects of national-patriotic education in Ukraine are paying maximum attention to the Ukrainian language, culture, history and the citizen's duty to protect the state.

According to A. Giudici and S. Grizelj, at the end of the XIX century, the relationship between the state, language and education became extremely complicated: the state hoped that education would reflect national identity, while the true nation was seen as monolingual. According to the literature on national identity, education was responsible for the formation of such an identity, and therefore curriculums usually promoted the use of a single language. This theory, which developed mainly in the context of monolingual national states, does not coincide with the position of democratic multilingual states [16]. However, it should be noted that although this new perspective affected all curriculums in different ways, it can be agreed that economic and pedagogical considerations were also important factors in the formation of language curriculums, along with national identity.

The importance of raising the level of ideological and political education to ensure not only professional but also patriotic education is exceptional. The result of such combined training should be educated talented citizens who possess not only professional skills, but also ethical values and a wider vision of the world [42]. This way, they will be able to better navigate in our time of unprecedented changes and more effectively contribute to the unity of Ukrainian society.

Textbooks from different historical periods, including modern ones are of particular importance for the formation of historical worldview of citizens and their ability to compare past events with the present [17].

Museums play an important role in the preservation and popularization of history, culture and social heritage. They are important centers where the material and spiritual values of the country are preserved and demonstrated, contributing to the formation of cultural self-awareness and patriotism among citizens [32].

When forming concepts for the introduction of patriotic education in Ukraine, geographical distance from the cultural centers of individual regions of the state should also be taken into account. We agree that a balanced approach to patriotic education and an understanding of the concept of patriotism is one that should be implemented by any state, which was also indirectly mentioned in the conducted study.

National-patriotic education plays a significant role in both general secondary and higher education, helping students to understand national culture and strengthen feelings of love and pride for their country. In secondary education, teachers actively work to inculcate patriotic values among students through classroom activities, using textbook materials, other valuable resources such as historical artifacts, cultural heritage and the achievements of outstanding scientists. The introduction of additional getting acquainted with the main life milestones and achievements of prominent

Ukrainian figures into school programs has the potential to enrich the educational process, helping teachers to create exciting educational activities and classes that are necessary not only for patriotic education, but also for effective and interesting learning. Agreeing with the idea of using national heritage items, it should be clarified that such artefacts should be placed in appropriate national museums, which should be given free access, especially to the younger generation.

According to V. Nedzinskaitė-Mitkė and N. Stasiulis, citizens within modern national states often face certain questions in terms of loyalty to their nation and state. Every self-conscious citizen tries to find a delicate balance between patriotic feelings and economic interests, individual rights and national well-being, as well as material needs and abstract ideals. It is in these searches that patriotic education should become a support [24.]. Unfortunately, it is impossible to agree with the position when a citizen opposes economic interests to patriotism, as this is one of the manifestations of insufficient patriotic upbringing. However, it should be noted that the timely establishment of an unfavourable development of the social situation in this area makes it possible to promptly regulate it.

Children's patriotic books, which are available in bookstores and can often be seen in various home and educational environments, also play an important role in patriotic education. Against the background of a social and political context where patriotism has historically been used by powerful elites to justify their actions and positions, as well as where approaches to teaching patriotism in schools are currently being actively debated, such books can be used against the people. While many authors seek to support a modern and inclusive form of patriotism, they also unwittingly support certain social attitudes that form hierarchical ideas about who and in what capacity has the right to membership in the national community [21]. The issue of proper literary support for patriotic education is always painful, since the young generation should see a positive example of a patriotic citizen in books or textbooks, and not face stereotypes and imposed ideas of dividing society into those and others. On the other side, developed patriotic education on the part of the state can neutralize such negative manifestations, in particular, if the state actively publishes state patriotic literature, which was already emphasized in this article.

In modern discussions about patriotic education, various views reveal differences between supporters of universalism and cosmopolitanism on the one side and supporters of communitarianism on the other one [18]. And although patriotism is not a legal obligation, the moral aspect of this phenomenon stems from the need for self-awareness of self-national identity by a citizen. However, it should be noted that the state shall solely define the concept and content of patriotism and patriotic education, since such ambiguity in the circle of scientists can develop into doubts about other issues in this area, discrediting the state position.

Today, patriotism does play an important role, especially in the context of the unity of a democratic society that functions as a joint enterprise, where members of the community are bound by laws and rules that

govern their behaviour and interactions. This is important for ensuring the coordination of public actions and solving collective problems. Patriotism also encourages citizens to actively participate in democratic processes, to prioritize the common good over personal interests. It promotes the development of a sense of civic responsibility and public spirit, which are important components for the effective functioning of a democracy [9.]. Therefore, the support of patriotic instructions and values in democratic education is considered important, as it contributes to the formation of active and responsible citizens who are able to participate in the common cause of society development. It should be agreed that in a democratic society patriotism is of great importance, as it unites society with the common goal of ensuring the effective functioning of the state and its development.

National-patriotic education, which is deeply rooted in general education, really contributes to the formation of national consciousness and promotes patriotic ideals. In particular, it is worth paying attention to certain methods and approaches. The use of various educational channels, which consists in the inclusion of patriotic materials in the curriculums of various subjects, the use of multimedia resources and interactive platforms to increase the accessibility and interest of the educational material. Heuristic teaching methods, in turn, promote the active participation of students in their own learning, allow them to solely discover and analyze historical facts and events. It is also important to emphasize the importance of historical truthfulness, in order to ensure the reflection of an objective picture of history and culture of the country in educational materials, and not their distorted or one-sided version. Much attention is also paid to the use of innovative educational tools and technologies in education, the creation of open distance courses, virtual tours and interactive programs to engage students in the study of history and culture of the country [14.]. (Gao C., Jiang, Q., Shi, Y., Jiang, W., Xie X., 2023). Instead, modern youth requires innovative approaches to patriotic education, because they are more getting acquainted with the achievements of scientific and technical progress, and master them more skillfully and quickly. However, we note that the implementation of such initiatives is not always possible on the part of educational institutions, in particular due to a lack of appropriate training or technical support.

Having analyzed the positions, arguments and historical experience of domestic and foreign scientists in relation to patriotic education, we can state that the main aspects of such education coincide in most cases with small regional and national features, which include paying attention to national sports and martial arts, national musical instruments, emphasizing the important role of pre-school and school patriotic education, the involvement of innovative and technological approaches in learning and patriotic education of young people.

### Conclusions

In this way, there were conducted the studies of national-patriotic education in the conditions of genocidal war, as a factor of the unity of Ukrainian society.

There were considered the concepts of patriotism and patriotic education, the process of its development, formation and current state, as well as there was substantiated the need for the formation of a patriotic outlook among citizens. The results of the study show that national-patriotic education is an effective tool of the state and the public to support identity and historical-cultural independence, preserve national memory and develop patriots ready to defend Ukraine. The principles of national-patriotic education, such as state-wide obligatory implementation, personal voluntary participation, highlighting of historical truth, cultural and physical development of a patriot, emphasize the importance of this process in the formation of civic consciousness and the unity of Ukrainian society. There were also highlighted the social, communicative, protective and cultural aspects of national-patriotic education. The social aspect contributes to the qualitative identification of an individual in society as a patriot through active participation in patriotic education and the organization of such measures. The communicative aspect has a positive effect on personality development by forming the basic principles of polite behaviour and respectful social communication skills. The protective aspect of national-patriotic education emphasizes the importance of a patriot's physical and moral readiness to defend the state during a threat. The cultural aspect is manifested in the cultural and educational influence of patriotic education through getting acquainted with historical events and prominent figures of the Ukrainian national and cultural revival. Certain recommendations were also presented regarding the effective further development of the social institution of the state.

The phenomenon of Ukrainian donations became the main factor that significantly paid the attention of the world public to charity. Foreigners still do not understand how in a country where there is a war, people themselves collect millions of UAH in a short period of time for attack and naval drones, satellites, military vehicles and equipment, ammunition and other weapons.

In addition, the number of people engaged in volunteering in Ukraine is probably much larger than in any other country in the world. Ukrainian volunteers solve all kinds of issues at any time.

Thus, Ukrainian volunteers and ordinary Ukrainians became a reliable rear of the soldiers of the Armed Forces of Ukraine. And this unity, which surprised the world in the first days of the Russian invasion, unites society in the future, becoming a driving force for good deeds.

Summing up, we note that the formation of national-patriotic consciousness in the conditions of a genocidal war is a key factor in the unity of the Ukrainian people, contributes to the strengthening of the socio-economic, spiritual, cultural foundations of the development of Ukrainian society and the state, the maintenance of national identity and independence, helping Ukrainians not to forget their roots and the true history of Ukraine. Further development of the concepts of principles, aspects, necessary conditions for the effectiveness of patriotic education in Ukraine should be included among the areas of possible studies.

In the conducted studies, the issues of the methodological basis of such education and the main pedagogical techniques for its implementation in practice were not considered in detail, which can also serve as topics for separate studies.

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