Edited by
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TRANSFORMATION OF EDUCATION: MODERN CHALLENGES

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This monograph delves into the pivotal role of project-research activities in cultivating environmental competence among high school students, especially in the face of pressing global environmental challenges exacerbated by war. It provides a thorough analysis of the current state of environmental education, elucidating the core concepts that underpin environmental competence, including its definition, structure, and relevance in overcoming the environmental repercussions of conflict.
This monograph responds to the call for adaptive educational practices that meet the needs of contemporary students while preparing them for the complexities of the future. By weaving together project-research activities, environmental education, and phraseology, it provides a comprehensive framework for nurturing the skills and competencies necessary for thriving in a multifaceted global landscape.
The monograph serves as a comprehensive resource for educators aiming to foster environmental competence and cultural awareness among high school students, equipping them to navigate an interconnected and challenging world.
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ABSTRACT

This monograph delves into the pivotal role of project-research activities in cultivating environmental competence among high school students, especially in the face of pressing global environmental challenges exacerbated by war. It provides a thorough analysis of the current state of environmental education, elucidating the core concepts that underpin environmental competence, including its definition, structure, and relevance in overcoming the environmental repercussions of conflict.

The research also situates the development of environmental competence within the broader context of societal needs for innovative and self-reliant citizens. It highlights the integration of information and communication technologies in education, emphasizing the necessity for future educators to exhibit social maturity and adaptability in an increasingly digital world.

Furthermore, the study extends an examination of the effectiveness of teaching phraseology within philological education, showcasing its potential to foster multicultural perspectives among students. By analyzing idiomatic expressions across different languages, the research suggests that phraseology serves as a means to enhance intercultural competence and appreciation, contributing to students' linguistic skills and cultural inclusivity amid ongoing conflicts, particularly in the context of Ukraine.

The monograph employs a multidisciplinary approach, drawing on theoretical frameworks such as Nassim Taleb's theories on fragility and resilience, along with empirical research into social and emotional learning (SEL) within the Ukrainian educational setting. By investigating the influence of cultural contexts on such programs, it offers insights into the adaptability of SEL frameworks to enhance educational outcomes while respecting local cultural traditions.

Ultimately, this work advocates for the necessity of incorporating project-based learning and phraseology in educational curricula, positing these as vital strategies for preparing students to engage with complex social and environmental issues. It provides educators with practical methodologies for implementing these frameworks, alongside recommendations for aligning educational programs with cultural contexts to maximize their effectiveness and relevance. Thus, the monograph serves as a comprehensive resource for educators aiming to foster environmental competence and cultural awareness among high school students, equipping them to navigate an interconnected and challenging world.

KEYWORDS

Environmental competence, high school students, consequences of the war, educational projects, skills, critical thinking, professional training, interdisciplinarity, social maturity, self-development, culture of society. Phraseology, philology students, multiculturalism, intercultural competence, Russia-Ukraine war, cultural context, socio-emotional and ethical training, national values.

CIRCLE OF READERS AND SCOPE OF APPLICATION

This monograph responds to the call for adaptive educational practices that meet the needs of contemporary students while preparing them for the complexities of the future. By weaving together project-research activities, environmental education, and phraseology, it provides a comprehensive framework for nurturing the skills and competencies necessary for thriving in a multifaceted global landscape.

The monograph serves as a comprehensive resource for educators aiming to foster environmental competence and cultural awareness among high school students, equipping them to navigate an interconnected and challenging world.

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INTRODUCTION

In an era characterized by rapid environmental degradation, social upheaval, and the pervasive impacts of technological advancement, education faces unprecedented challenges and opportunities. The holistic development of students is imperative not only for their personal growth but also for fostering a more sustainable and equitable society. This monograph centers on the crucial role of project-research activities in cultivating environmental competence among high school students. It aims to explore the features, content, forms, and methods for effectively implementing these activities within the educational framework.

Environmental competence refers to the ability of individuals to understand and engage with complex ecological issues, fostering a proactive stance toward environmental stewardship and sustainable practices. As high school students are positioned at a critical juncture in their lives, the cultivation of environmental competence is particularly significant. It not only equips them with the necessary knowledge and skills but also instills a sense of responsibility towards their immediate surroundings and the planet at large.

Studies indicate that environmentally competent individuals are more likely to engage in pro-environmental behaviors, influencing their communities and contributing to sustainable development. The urgency for such competence has never been more salient, given the mounting challenges posed by climate change, biodiversity loss, and the environmental consequences of geopolitical conflicts, such as those currently witnessed in regions affected by war.

Project-research activities provide an innovative pedagogical strategy that enables students to engage deeply with environmental issues through inquiry, collaboration, and hands-on problem-solving. Such activities encourage students to apply theoretical knowledge to real-world contexts, facilitating a deeper understanding of ecological dynamics and fostering critical thinking skills. Through these activities, students learn to analyze specific ecological situations, identify problems, and devise actionable solutions that consider both social and environmental factors.

The effectiveness of project-based learning in enhancing student engagement and understanding has been well-documented. These activities cultivate critical soft skills including teamwork, communication, and leadership, which are essential for thriving in a collaborative world. As students work in teams to tackle environmental issues, they also gain insights into the complexities of group dynamics, resource management, and project implementation.

A systematic approach to project-research activities can thus serve as a model for environmental education. This monograph will outline a detailed algorithm for implementing such activities, enabling educators to foster a structured environment where students can flourish.

The focus of our analysis is particularly pertinent in the context of overcoming the environmental consequences of war. The psychological and environmental aftermath of conflict can entail severe disruptions to local ecosystems, degradation of natural resources, and loss of biodiversity. In such

areas, environmental education must be responsive to the realities of the situation, equipping students not only with knowledge but also with practical skills to address pressing ecological challenges.

An important aspect of this monograph is the exploration of the intersection between project-research activities and the socio-political climate of conflict-affected regions. By understanding these dynamics, educators can tailor their approaches to meet the unique needs of students, instilling resilience and an active sense of agency in the face of adversity. In doing so, students are not merely passive recipients of knowledge; they become active participants in the restoration of their communities and environments.

The integration of information and communication technologies (ICT) into education has become a critical component of modern pedagogy. ICT offers unprecedented opportunities for enhancing student learning and engagement, allowing for the exploration of ecological data, collaboration with peers across geographical boundaries, and the accessibility of information resources that were previously unavailable.

Considering the rapid informatization of society, the necessity for future educators to develop digital competence is paramount. In addition to equipping students with environmental knowledge, educators must prepare them for participation in an information-rich society. Therefore, the development of informational self-awareness and critical engagement with digital resources must be integral to the educational experience.

In addressing the complexities of multiculturalism and linguistic diversity, the monograph also examines the role of phraseology in philological education. The study of fixed expressions and idioms provides a unique lens through which students can explore cultural nuances and social values embedded within language. By fostering intercultural competence through phraseology, educators can better prepare students to navigate the intricacies of a globalized world, enriching their understanding of shared human experiences while appreciating cultural specificities.

Moreover, recognizing the impact of language on cultural identity, this monograph advocates for the incorporation of phraseology into the philological curricula. Such an approach supports the development of a multicultural perspective, preparing students for effective cross-cultural communication and collaboration – skills that are increasingly necessary in today's interconnected society.

This research employs a multidisciplinary approach, integrating insights from various fields including environmental science, education, sociology, and linguistics. By contextualizing the discussion within contemporary theories, such as N. Taleb's concepts of fragility and antifragility, the monograph situates educational practices within broader societal frameworks. This integration allows for a nuanced understanding of the interplay among education, social dynamics, and technological advancement, particularly in the context of evolving cultural and environmental landscapes.

The theoretical foundation of this monograph stems from various methodological frameworks that emphasize the significance of adaptability and self-organization in complex systems. Concepts such as I. Prigogine's theories on the emergence of order from chaos and H. Haken's ideas regarding self-organized systems provide valuable insights into how individuals and communities can navigate unpredictability. These theories illustrate the potential for educational settings to foster

resilience and creativity among students, guiding them to harness their capabilities as they engage with environmental challenges.

Understanding the dynamics of receptivity to new information and experiences is critical in encouraging students to think critically and adapt to changing environments. This research outlines different types of receptivity and the means of developing both individual and collective readiness for innovation. By fostering an environment where new ideas are welcomed and explored, educators can prepare students to engage meaningfully with emerging social, cultural, and environmental issues.

The cultural context in which education occurs plays a crucial role in shaping the efficacy of teaching strategies, particularly with respect to social-emotional learning (SEL) programs. The adaptation of these programs to reflect the cultural nuances of Ukrainian society serves as a case study within this monograph. Leveraging Hofstede's cultural dimensions, an analysis of Ukrainian values reveals a predisposition toward collectivism, spirituality, and reliance on community. Empirical research conducted on the implementation of SEL programs has underscored the importance of engaging teachers, students, and parents in shaping these initiatives. The findings highlight that a culturally sensitive approach to SEL fosters increased involvement and ownership of the learning process.

As we move forward into an era defined by uncertainty and change, the stakes for educational practices have never been higher. The increasingly pressing nature of global challenges – ranging from climate change to geopolitical instability – demands a new generation of learners who are not only academically equipped but also socially responsible and environmentally literate.

This monograph responds to the call for adaptive educational practices that meet the needs of contemporary students while preparing them for the complexities of the future. By weaving together project-research activities, environmental education, and phraseology, it provides a comprehensive framework for nurturing the skills and competencies necessary for thriving in a multifaceted global landscape.

In summation, this introduction sets the stage for a detailed exploration of environmental competence through project-research activities, highlighting their significance in the educational journey of high school students. It addresses the urgent need for educational strategies that align with the realities of social and environmental challenges, advocating for a cohesive approach that integrates theoretical insights, interdisciplinary methods, and cultural relevance. The forthcoming sections of this monograph will provide an in-depth examination of the methodologies, frameworks, and practices that can foster a transformative educational experience, equipping students with the tools they need to navigate the complexities of a changing world.

Through this work, we seek to inspire educators, policymakers, and stakeholders to reconceptualize environmental education as not just a subject to be taught, but as a vital force for personal growth, social responsibility, and global stewardship. As high school students engage with their environments and grapple with the implications of their actions, they can emerge as empowered citizens equipped to contribute positively to society and the planet. The journey toward fostering environmental competence begins here, aiming to create a more sustainable future grounded in informed and engaged individuals.

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CHAPTER 1

CHAPTER 1

APPLICATION OF PROJECT TECHNOLOGIES DURING THE FORMATION OF THE ENVIRONMENTAL COMPETENCE OF HIGH SCHOOL STUDENTS TO OVERCOME THE ENVIRONMENTAL CONSEQUENCES OF THE WAR

ABSTRACT

The section is devoted to the study of the features, content, forms and methods of forming the environmental competence of high school students by means of project-research activities. The state of development of the problem of the formation of environmental competence among high school students by means of project-research activities in the context of their continuous development is analyzed; the essence and structure of the concepts "environmental competence of high school students", "formation of environmental competence in high school students in the context of overcoming the environmental consequences of the war", "educational project", "project-research activity", "creative process" are specified. Scientific-methodical and educational support for innovative methods of forming the environmental competence of high school students by means of project-research activities has been created. The chapter is dedicated to the study and representation of the project activities of high school students in the conditions of overcoming the environmental consequences of the war through the developed algorithm of actions: analysis of the ecological situation of a specific region; determination of the goals of project activity; development of a strategy for the implementation of project activities; forming a team of project executors; attraction of resources for project implementation; implementation of activities to overcome the environmental consequences of the war; monitoring and evaluation of project activity results; reporting to the community and sharing the experience of successful project activities; the process of monitoring the implementation of project activities; the process of correcting the results of project activities. The specified material provides the opportunity for teachers to use it during the educational process and is a model for creating their own environmental projects.

KEYWORDS

Environmental competence, high school students, environmental problems, elimination of environmental consequences of the war, educational projects, project-research activity.

1.1 THE RELEVANCE OF THE IMPLEMENTATION OF ENVIRONMENTAL PROJECTS BY HIGH SCHOOL STUDENTS IN THE CONDITIONS OF OVERCOMING THE ENVIRONMENTAL CONSEQUENCES OF THE WAR

Under modern conditions, when military conflicts and their consequences are becoming an indispensable part of reality for many countries, the issue of adaptation of young people, particularly high school students, to these difficult conditions is especially relevant. War and armed conflict can have serious environmental consequences, including pollution of soil, water and air, and destruction of ecosystems and natural resources. In such conditions, the environmental project activity of high school students becomes especially important, as it is aimed at preserving and restoring the environment, as well as increasing environmental awareness among young people.

The aggression of the armed forces of the Russian Federation in Ukraine, heavy ground weapons, including long-range artillery, missiles, naval ships and military aircraft, have led to large casualties among the civilian population and damage to the natural system of Ukraine. The results of the war for the environment (increased radiation background in the Chernobyl zone due to the movement of heavy armored vehicles and other transport on contaminated soils and the raising of radioactive dust into the air; damage by ballistic missiles to oil depots throughout the territory of Ukraine and air pollution over residential areas with toxic products of open combustion; damage to gas pipelines in populated areas, powerful explosions and shock waves; damage to enterprises in various industries and the creation of chemical hazards for civilians and ecosystems) require the implementation of appropriate measures to ensure environmental safety in Ukraine.

It is clear to the general public that after the end of the war, environmental problems will be evident for a long time. During the war, more than a thousand rockets were fired at Ukraine, tens of thousands of military equipment of the occupiers of various types were destroyed, which led to the accumulation of carcinogenic waste: spilled fuel, destroyed equipment and spent weapons, detonated missiles.

The negative impact on the environment threatens the health and lives of all those who remain in Ukraine now and will live in the future. Debris, formed during the current shelling of buildings, poisons the air, burns the skin, and other organs. Chemicals, released from damaged facilities and critical infrastructure, seep into the ground, poisoning soil and plants important to the food industry.

For example, damage to water, sanitation and hygiene infrastructure creates widespread health threats, including typhoid, cholera, dysentery and polio, among others. As a result of rising temperatures due to the lack of centralized water supply and sanitation, the decomposition of thousands of corpses under rubble, a catastrophic lack of drinking water and food, powerful and deadly epidemics can break out, which is undoubtedly a consequence of environmental pollution.

Thus, today's complex military conditions dictate a change in the priorities of the state and society regarding the formation of the environmental competence of education seekers as future specialists and participants in the reconstruction and qualitative transformation of the country.

War leaves destruction in its wake, including environmental disasters, pollution and destruction of natural resources, which requires appropriate measures to restore the environment and ensure

vital conditions for people and nature. Let's consider in more detail what aspects should be taken into account when creating project cases in the following conditions:

1. **Analysis of environmental problems**. The first step in creating a project case is the analysis of environmental problems that arose as a result of the war. These can be contamination of soils and water bodies with chemical substances, destruction of ecosystems, loss of biodiversity and other environmental crises.

2. **Determination of the goals and objectives of the project**. The second step is to define the specific goals and objectives of the project. This can be, for example, restoration of natural ecosystems, reduction of water pollution, restoration of resources to ensure the vital needs of the population, etc.

3. **Development of strategies and methods**. After defining the goals, it is necessary to develop strategies and methods for their achievement. This may include the cleaning of territories from garbage and chemical pollution, restoration of vegetation, creation of new water supply and water purification systems, etc.

4. **Implementation of the project and achievement of results**. High school students can implement their project by performing planned actions and achieving defined goals. This may include the organization of working groups, carrying out work in territories with a damaged ecosystem, planting trees and plants, conducting educational activities, etc.

5. **Evaluation of results and lessons learned**. After the project is completed, it is important to evaluate its results and learn the lessons obtained. This will help determine the successes and shortcomings of the project, as well as draw conclusions for future initiatives.

6. **Dissemination of experience and impact on society**. Equally important is the dissemination of experience and impact on society. The creation of a project case will make it possible to convey information about environmental problems and ways to solve them to the public, as well as to mobilize society to action.

The creation of project cases during the implementation of environmental projects by high school students in the conditions of overcoming the environmental consequences of the war is an important step in preserving nature and ensuring vital conditions for people. These cases not only demonstrate concrete examples of positive impact on the environment, but also teach students to systematize their knowledge and experience, identify problems and ways to solve them, and effectively communicate their ideas and achievements with others.

1.2 METHODOLOGICAL FOUNDATIONS OF PROJECT TECHNOLOGIES. TERMINOLOGICAL AND CATEGORICAL APPARATUS

The theoretical analysis of the problem of the application of project technologies during the formation of the environmental competence of high school students to overcome the environmental consequences of the war made it possible to clarify the terminological and categorical apparatus of the study.

Environmental competence of students in accordance with the State Standard of Basic Secondary Education includes the ability to be aware of the ecological foundations of nature use, the need for nature protection, to comply with the requirements of behavior in nature, to use natural resources sparingly, to understand the importance of the context and interdependence of economic activity and the need to preserve nature, which will contribute to ensuring the sustainable development of society [4].

Environmental competence of high school students *includes the ability to consciously act in the natural environment on the basis of acquired environmental knowledge, abilities, skills, experience and values regarding the responsible use of natural resources, actualization of decision-making skills, performance of appropriate actions, responsibility, awareness of the consequences for the environment in order to ensure sustainable development of society.*

The formation of environmental competence in high school students in the context of overcoming the environmental consequences of the war is a purposeful process of forming the ability to quickly determine the level of environmental pollution and identify environmental threats during military operations, modeling the zone of spread of the level of pollution, drawing up an action plan to prevent the occurrence of pollution and restore the affected areas during the war, ***which is based on the personal and collective practical experience of high school students,*** *which was formed during the previous project-research activity (hereinafter the activity) in a project-oriented educational environment; on the knowledge and ideas about the activity, its purpose, means, result, which the student of senior classes chooses independently or with the participation of a peer, an adult; on the emotional and value attitude to one's own activity, which was formed and accepted by a high school student to one's own experience of environmental action and selected for use during participation in project technology.*

Modernity actualizes project technology as an innovative for the formation of the competence of education seekers, which is currently one of the most promising in the professional training of specialists. Thanks to the specified technology, the educational process is filled with a professional context, and the ability of education seekers to self-education, self-improvement, effective educational and cognitive activity, the development of creativity, communication, independence, and research competence is formed.

The results of the generalization of the studied psychological and pedagogical literature on the topic of the study are presented in the content analysis of the concept of "project technologies" in **Table 1.1**.

In view of the research carried out, the educational project is identified with an integrative didactic technology of learning and education, aimed at developing the competence of the learner; the method of teaching and the form of organization of educational and cognitive activity, which involves the cooperation of all participants in the educational process with the aim of obtaining a specific result for a certain period – from one lesson to several months.

We understand ***the project-research activity of high school students*** as a set of environmental actions, the direction of which demonstrates a conscious line of movement/trajectory/path

of the student's own activity, which is in development, the driving force of which is the motive of creation in a project-oriented educational environment. The environmental activity of a high school student is a manifestation of the creative process in a project-oriented educational environment.

Table 1.1 Content analysis of the concept of "project technologies"

Author	Concept definition
N. Vovk, I. Viktorenko, I. Fed	personally oriented technology and method of organizing students' independent activities, aimed at solving the set tasks and goals, involves reflective, presentational, research, search activities of students, integrates a problem-based approach, group methods [2]
O. Ilyina	joint educational and cognitive, creative game activity of students with a common goal, coordinated methods of activity, aimed at achieving a common result [7]
O. Kobernyk, S. Yaschuk	practice of personally oriented learning in the process of a student's concrete work, based on his/her free choice, taking into account his/her interests. In the student's mind, it looks like: "Everything I learn, I know, and what I need it for and where I can apply this knowledge." [8]
G. Romanova	Teacher's activity, aimed at substantiating the target idea, development and implementation of the didactic project as an innovative model of the learning process [14]
O. Khischenko	form of educational and cognitive activity, which consists in the motivational achievement of a consciously set goal of making a creative project, ensures the unity and continuity of various aspects of the learning process, is a means of developing the personality of the subject of learning [23]

In the context of the presented research, we understand ***the process of creation*** as a set of consecutive ecological actions, steps for the existence of choice and use of means, aimed at achieving a certain goal, a real consequence/result, which occurs naturally and forms the environmental competence of a high school student/affects the development (restoration) of the ecosystem of Ukraine in the context of overcoming the environmental consequences of the war.

The very process of creation, according to the scientist I. Bekh, involves the active participation of a high school student in the use of his/her own experience of activities, which brings to life the idea of creating, giving existence to the new, preserving the high-quality past, created and adopted in the life of the student as an example/sample of the creation of parents, teachers, scientists. The student's moral-behavioral fund, formed at the level of the image of moral actions, prompts to determine the reasons and goals of those moral actions, which must be supported by an emotional-motivational component, which is always deeply individual and depends on the psychological characteristics of the high school student [1]. The process of creation also involves the drawing of plans, the content of which is filled with the processes of preservation, prevention and elimination, which enable the processes of restoration and the emergence of a new one, created by the student now on his/her own initiative or collective decision. The appearance of a real

consequence – a result that satisfies the need and to which the act of a high school student is directed, is connected with the motivational basis of the act. Having an existing motivational basis that arises at a certain stage of the formation of moral action, the teacher must ensure the dominance of higher moral and spiritual motives, that is, values that constitute the goal of personality development. Such educational activity of the teacher unfolds at the stage of the student's awareness of the act at the scientific-conceptual (essential) level [1].

In such a situation, which involves the process of creation, the student is the cause of the emergence of the new, the revival of the already existing; along with this, the student can be the cause of the actions and deeds of peers or adults and shape their creative process with their own environmental actions. The content of the process of creation in the ecosystem involves ecological actions, activities that are aimed at a real consequence – the creation of the life of all living things that surrounds the high school student today.

1.3 THE PROCESS OF PROJECT ACTIVITIES OF HIGH SCHOOL STUDENTS IN THE CONTEXT OF OVERCOMING THE ENVIRONMENTAL CONSEQUENCES OF THE WAR

The process of project activity of high school students in the conditions of war and post-war reconstruction of Ukraine should be aimed at providing them with support, developing resources to overcome difficulties and building a positive perspective for the future.

A sociological survey, conducted among Ukrainians by the Kyiv International Institute of Sociology, made it possible to identify a number of environmental problems, caused by the war. Among the main environmental problems, caused by military actions, Ukrainians include: radiation contamination (56.4 % of respondents), mining of agricultural land and forest plantations (39.5 % of respondents), spread of poisonous substances as a result of shelling of oil depots, gas storage facilities, and chemical facilities industry (36.5 % of Ukrainians).

According to the respondents, the severe consequences of the war for Ukraine's environment are also related to: pollution of rivers, ponds and seas, caused by the sinking of ships, spread of oil products and explosives; destruction of protected areas, destruction of ecosystems, death of animals and birds, forest fires; destruction of treatment facilities, dams, water supply networks; littering of territories with fragments of destroyed buildings, gutted cars, remains of household items and appliances, etc.; significant air pollution.

The correlation of types of environmental pollution, caused by the negative consequences of the war and their impact on the human body (**Table 1.2**), confirms the low degree of ability of Ukrainian citizens to practically apply knowledge about the paradigm of safety behavior, both their own and in relation to objects that pose an environmental threat, and implementation of health care competence in difficult environmental circumstances.

The process of project activities of high school students in the conditions of war is primarily important to start with the analysis of the ecological state of the specified region after the war or

armed conflict. This may include assessing levels of air, water and soil pollution, as well as studying the effects of military operations on ecosystems and natural resources. On the basis of this analysis, it is possible to determine the priority directions of environmental activities for high school students. For example, if war or conflict continues in the southern regions, where widespread unemployment and economic instability may be a problem, the adjustment of project activities may include elements of economic recovery through small business support or agricultural development projects.

Table 1.2 Correlation of types of environmental pollution and their impact on the human body

Environmental pollution type	Impact on human health
Debris formed during the current shelling of buildings	Air pollution, burns of skin, other organs
Chemicals released from damaged facilities and critical infrastructure	Pollution of soils and water bodies, agricultural plant and animal products
Damage to water supply and drainage infrastructure	Consumption of contaminated drinking water, which leads to diseases and poisoning of the human body, in particular typhoid, cholera, dysentery, poliomyelitis
Biological pollution (decomposition of thousands of corpses under rubble)	Possibility of outbreaks of deadly epidemics
Air and water pollution	Respiratory and digestive diseases
Sudden exposure to an intense sound due to a gunshot or explosion	Barotrauma, acoustic trauma, acubarotrauma (traumatic damage to hearing organs)
Radiation pollution, emission	Threat of oncological diseases due to contamination of environmental components with radioactive particles

Next, it is worth developing and implementing environmental protection projects, aimed at restoring and protecting natural resources, reducing pollution and increasing environmental awareness.

In order to achieve the goal of the project activity of high school students in the conditions of overcoming the environmental consequences of the war, the following sequence of operations can be considered:

1. Analysis of the ecological situation of a specific region.
2. Determination of the goals of project activity.
3. Development of a strategy for the implementation of project activities.
4. Formation of a team of project executors.
5. Involvement of resources for project implementation.
6. Implementation of activities to overcome the environmental consequences of the war.
7. Monitoring and evaluation of project activity results.
8. Reporting to the community and sharing the experience of successful project activities.
9. The process of monitoring the implementation of project activities.
10. The process of correcting the results of project activities.

We detail the above sequence of operations, that is, the algorithm of actions during the organization and implementation of an environmental project by high school students:

1. Analysis of the ecological situation of a specific region.

The first step is to carry out a detailed analysis of the environmental consequences of the war in a specific region. This includes identifying the main sources of pollution, the level of damage to ecosystems, and identifying the most critical problems. Let's take a closer look at the first step – the analysis of the situation, which involves a detailed analysis of the environmental consequences of the war in a specific region.

Collection of information. The initial stage is the collection of all available information about the state of the environment in the military conflict of the specified region. This may include reports from environmental organizations, data from local authorities, scientific research, photos and videos, etc.

Assessment of the level of pollution. Data analysis to determine the level of pollution of various components of the environment: air, water, soil, biodiversity. This includes identifying the types of pollutants, their distribution and environmental impact.

Identification of the main problems. Establishing the main environmental problems arising as a result of the war. This can be the destruction of forests, pollution of water bodies, emissions of harmful substances into the air, destruction of natural places of mass recreation, etc.

Determination of promising directions of action. On the basis of the obtained data, it is necessary to determine promising directions of action to overcome environmental problems. This can be restoration and protection of natural territories, cleaning of polluted water bodies, reduction of emissions of harmful substances, introduction of ecological technologies, etc.

Taking into account the peculiarities of the region. It is important to take into account the specific features of each region, such as climatic conditions, geographical location, and the presence of unique ecosystems. This will help to develop strategies more effective and adapted to specific conditions.

Analysis of the situation is an important stage in the planning of any project, especially one, aimed at solving complex environmental problems. It allows you to understand the scale of the problem, determine priorities and develop an effective action strategy to achieve the set goals.

2. Determination of the goals of project activity.

After the analysis, you need to determine the specific goals of the project. It can be the cleaning of water bodies, restoration of forests, reduction of emissions of harmful substances or other tasks, aimed at improving the ecological situation.

Formulation of the main goal is the first step, which involves a clear formulation of the main goal of the project, which should be aimed at solving a specific problem, identified during the analysis of the situation. For example, the main goal may be to restore the ecosystem of a certain natural place or reduce the level of pollution of water resources.

Setting specific goals is possible on the basis of a defined purpose, that is, you need to define specific, measurable and achievable goals that will help achieve this purpose. Defining goals is

a key stage in planning any project, as they determine the course of action and criteria for success. Clearly formulated goals help to focus on necessary tasks and efficiently use resources to achieve improvements in solving environmental problems. For example, goals may include cleaning a certain number of hectares of land from pollution, restoring a certain type of plant or animal, reducing the content of harmful substances in water bodies, etc.

It is advisable ***to formulate strategies and tasks*** after setting goals, it is necessary to develop strategies and specific tasks that will be aimed at achieving the set goals. This may include the development of plans to clean water bodies, the implementation of measures to restore vegetation cover, the implementation of environmental education programs, etc.

Consideration of resources should be carried out at the stage of defining goals, as it is important to consider available resources, such as human, material and financial, that can be used to implement the project. This will help make the goals realistic and achievable.

Setting deadlines is an important element because every goal should have a clearly defined deadline. This will help determine the work schedule and ensure the timely achievement of the set goals.

3. Development of a strategy for the implementation of project activities.

Planning the specific actions to be taken to achieve the goals may include discussion and development of the technical, financial and organizational aspects of the project.

Discussion and analysis of the technical aspects of the project include the necessary equipment, tools, and technologies that will be used to perform the work. This may include such types of work as: developing methods for cleaning water bodies, restoring vegetation, building barriers to prevent the spread of pollution, etc.

Analysis of financial aspects is the next step, which is carried out through the analysis of financial aspects of the project, including the assessment of the costs of materials, equipment, transportation, labor costs, as well as the search for opportunities to receive funding from various sources, such as government grants, sponsorship support, charitable contributions, etc. *The analysis of the financial aspects of the project* includes an estimate of costs for the purchase of equipment, materials, wages, transportation costs, etc.; developing the project budget and finding sources of funding, such as government grants, sponsorship support, charitable contributions, foundations, etc.

Development of organizational aspects – the third step, which includes the development of organizational aspects of projects Discussion and development of technical aspects of the project takes place subject to compliance with the sequence of actions, namely: determination of the necessary equipment and materials for performance of work; development of methods for cleaning contaminated areas, restoration of natural resources, restoration of ecosystems, etc.; study of modern technologies and methods that can be used to solve environmental problems as efficiently as possible.

During the development of the organizational aspects of the project, special attention should be paid to the formation of the team and the distribution of responsibilities among its members. Let's consider in more detail and concretize this process in the form of an action algorithm:

1. *Formation of the team by defining the necessary roles and competencies*. Various skills and knowledge are required for the successful implementation of the project. For example, ecologists, engineers, financiers, organizers, communication specialists, etc. may be needed.

2. It is advisable *to search for candidates* openly or with the help of a targeted set of team members who have the necessary skills and motivation to work on the project.

3. *Involvement of volunteers and employees* is valuable, so it is advisable to consider the possibilities of involving volunteers and other interested persons to participate in the project.

4. *Division of duties* is also important to define roles and responsibilities. Therefore, each team member must have clearly defined duties and responsibilities for the performance of certain tasks.

5. *Creating an organizational structure* and establishing a hierarchy and team structure that reflects the distribution of responsibilities and relationships between participants.

6. *The development of the reporting and communication system* in environmental projects, performed by high school students, is of key importance both for the project itself and for its impact on the environment and society in general. A properly organized reporting system allows you to effectively monitor the progress of the project, identify its strengths and weaknesses, as well as attract interested parties to cooperation and support. Communication, in particular, allows high school students to express their ideas, share knowledge and experience with other project participants and the public, which contributes to spreading awareness of environmental issues and mobilizing society to action.

The first thing to consider in the process of developing a reporting and communication system for an environmental project for high school students is adaptation to the target audience. Given that these are high school students, communication strategies and formats must be appropriately selected to be interesting, comprehensible, and engage participants in active participation.

Second, the reporting system should be systematic and comprehensive. This means that high school students should regularly record their progress, tasks completed, time and resources spent, as well as note the results achieved and learning outcomes. Such a system will allow effective project management, identifying problems and ways to solve them in a timely manner.

Third, communication should be two-way and open. High school students should be able to express their ideas and opinions, listen and respond to the opinions of their peers, and communicate with stakeholders, such as teachers, parents, environmental experts, and other members of the public.

Fourth, it is important to consider the impact of the project on the environment and society. The reporting system should provide for the collection and analysis of relevant data on the environmental impact of the project, its benefits to the community and possible risks. This will help not only to evaluate the effectiveness of the project, but also to identify possible ways for further improvement and development.

Finally, the reporting and communication system must be accessible to all stakeholders. This may include creating a website or blog, organizing exhibitions, presentations and other events where high school students can demonstrate their achievements and communicate with the community.

Therefore, the development of the reporting and communication system is a key element of the successful implementation of the environmental project by high school students. Target orientation, systematicity, openness and adaptability to the audience allow not only to effectively manage the project, but also to maximize its potential for impacting the environment and society in general.

4. Formation of a team of project executors.

Taking into account the individual characteristics of each member of a group of high school students for the implementation of environmentally oriented project activities through the assignment of their roles is an important aspect for successfully overcoming the environmental consequences of the war in a specific region. Assigning roles to each member of the group helps to take into account their abilities, interests and motivation, which contributes to the effective performance of tasks and the achievement of the common goal.

The first step of this process *is to analyze the skills and knowledge of each member of the group*. Some high school students may have a background in the field of ecology, others in leadership, communications or technical knowledge or artistic fields. This analysis will help allocate roles in the group, so that each member can make the most of their abilities and complement others.

Next is the consideration of interests and motivation. Each participant has his/her own interests and motivations. One may be interested in researching the impact of pollution on river ecosystems, another in developing water treatment technologies. Taking into account these individual characteristics will enable the distribution of roles in a group of high school students to successfully overcome the environmental consequences of the war in a specific region.

The final stage is *the assignment of roles*. Based on the analysis of skills, knowledge, interests and motivation of each participant, specific roles in the group can be assigned. For example, someone with a research background may be responsible for analyzing environmental problems, while someone with a technical background may be responsible for developing technical solutions. These can be roles, such as project manager, environmental experts, engineers, financial analysts, organizers, marketers, etc.

Possible roles of project executors:

The project coordinator is the person responsible for the overall management of the project. He/she sets goals, defines tasks and assigns their fulfillment to group members. The coordinator is also responsible for organizing meetings, monitoring deadlines and coordinating the work of all participants.

The researcher on the environmental effects of the war studies the effects of the war on the environment in a specific region. He/she collects and analyzes data on air, water and soil pollution, the impact on local fauna and flora. The results of the study will help the group develop strategies to overcome environmental problems.

The technical expert is responsible for developing technical solutions to solve environmental problems. He/she can study water purification technologies, the use of renewable energy sources, or methods of restoring damaged ecosystems.

The public activist engages in interaction with the local population, organizations and authorities. This executor develops and implements environmental education programs, organizes environmental events and actions to attract attention to the problem.

The communication manager is responsible for internal and external communication. He/she creates communication strategies for the promotion of the project, interacts with the media, prepares informational materials and ensures internal communication in the group.

The financial analyst is responsible for the financial aspect of the project. This specialist develops budgets, maintains financial records, seeks funding opportunities and ensures efficient use of resources. An important activity is to encourage *cooperation and mutual assistance*, so that each participant understands his/her responsibilities and is ready to help others. Stimulating mutual assistance and cooperation helps to unite the team and achieve better results.

These roles can be adapted depending on the specific needs and capabilities of the group of high school students and the specifics of environmental problems in the region. It is important that each member of the group has clear tasks and feels their importance in achieving the common goal of overcoming the environmental consequences of the war.

5. Involvement of resources for project implementation.

One of the key stages of project implementation is attracting the necessary resources for it. It can be human capital (project participants, volunteers), material resources (tools, equipment) and financial resources. Let's detail the specified aspects:

1. ***Human capital***, as mentioned earlier, is the *participants of the project*, that is, high school students who take an active part in the implementation of various tasks of the project, from the research and analysis of the problem to the direct implementation of environmental measures. In addition, they are *volunteers* who can help with certain tasks or perform supporting or accompanying functions, which will allow to attract additional labor forces.

2. ***Material resources*** are the supply part of the project, which includes *tools and equipment*, because depending on the nature of the project, various equipment may be needed for conducting research, removing pollution, restoring ecosystems, etc. No less important are materials, for example, plant materials for reforestation, means for cleaning water bodies, building materials for infrastructure restoration, etc.

3. ***Financial resources*** become especially significant in the context of the significant ecological consequences of the war for the environment of Ukraine. Therefore, the provision and receipt of *state grants* is updated. Therefore, it is worth acquiring the skills of the right application through the preparation of application forms for funding to state or international funds that provide grants for the implementation of projects in the field of ecology and restoration of natural resources. *Sponsorship support* also becomes significant, according to which organizations, enterprises or private individuals can provide financial support for the implementation of an environmental project by high school students. In this regard, non-formal and informal education, as well as social relations with non-state institutions of environmental orientation, begins to play an important role. The role of charitable contributions from residents of territorial communities and all those interested

in attracting funds through the collection of charitable contributions**,** in particular from the public or the business community, is growing.

This process is critical for the successful implementation of the project, since the efficiency and effectiveness of solving environmental problems related to the consequences of the war in a specific region depends on the volume and quality of the resources involved.

6. Implementation of activities to overcome the environmental consequences of the war.

Carrying out practical actions in accordance with the developed strategy, in particular, it can be the cleaning of territories (for the creation of appropriate safe conditions and available opportunities for high school students), restoration of natural ecosystems, conducting information campaigns, etc. Thus, it is advisable to start the cleaning of the territories with the analysis of the situation through the assessment of the degree of contamination of the territories by the consequences of the war, the determination of the most critical areas for cleaning in the conditions of the possible implementation of such activities (to ensure the health of high school students and the absence of any threat). The next step is to develop a plan with the definition of cleaning methods, establishing the sequence of actions and the distribution of tasks among team members.

The implementation of activity on the possible ***restoration of natural ecosystems*** should begin with the planning of work on the definition of zones for restoration, the selection of species of plants and animals that need to be restored, and the development of a scheme for putting plants. The next action is the implementation itself, i.e., carrying out work on planting trees, bushes, grassy vegetation, restoration of water bodies and other natural objects.

Information campaigns play an important role, so the development of an information plan, in particular the definition of the target audience, the selection of means and communication channels for the dissemination of information, becomes significant. It is also necessary to create materials, namely: the development of information brochures, posters, videos, press releases, etc. And, of course, in the end **–** conducting campaigns and distributing informational materials through educational events, popular science lectures, seminars, etc.

7. Monitoring and evaluation of project activity results.

After performing the work, it is necessary to evaluate the results. This will help to determine the effectiveness of the measures, identify the successes achieved and problematic issues that require additional solutions. We will present a possible algorithm for carrying out the specified activity:

1. ***Determination of success criteria and development of indicators***. It is advisable to clearly define the specific indicators, by which the project results will be evaluated, in particular, the amount of pollution removed, the area of the restored natural territory, changes in ecological indicators, etc.

2. ***Data collection and analysis and process monitoring***. Systematic data collection should be carried out during the execution of activities, which will allow monitoring progress and identifying possible problems. The evaluation of the results should be carried out by analyzing the obtained data to assess the compliance of the achieved results with the defined success criteria.

3. ***Identification of successes and problems, assessment of achievements***. Determination of the positive results and achievements of the project based on the collected data is important for evaluating the results of project activities of high school students. In addition, identifying problems, i.e. identifying possible problematic issues or shortcomings in project implementation, which require additional attention and resolution, becomes more important.

4. ***Improvement of the strategy and correction of further actions***. Correction of identified deficiencies and development of new strategies for further improvement of the project. Planning of future activities: taking into account the obtained results for planning further steps in the implementation of the project.

Monitoring and evaluation of results is an important stage in project management, as it allows timely identification of problems and achievements, taking them into account during further planning and project management. This process helps to ensure the effectiveness and success of project activities of high school students in the difficult conditions of the consequences of the war in a specific region.

8. Reporting to the community and sharing the experience of successful project activities.

It is important to present the obtained results to the public and relevant institutions. This will contribute to the dissemination of experience, motivation of other citizens to similar initiatives and draw attention to the problem of environmental consequences of the war. In our opinion, the specified activity should be concretized through a number of specific stages, namely: preparation of the report, collection and systematization of data; drawing up a report and structuring information; dissemination of experience and publication of the report. We detail them in the text:

1. ***Preparation of the report, collection and systematization of data*** are carried out through the review of all the results obtained and the information that was collected during the implementation of the project. The analysis of the results helps to determine the key conclusions, achievements, to single out the problems and shortcomings of the project.

2. ***Compilation of the report and structuring of information*** is ensured by the preparation of a structured report with a clear sequence of information about the performed work, achieved results, costs and recommendations. Linguistic competence is updated, namely the use of accessible language, as the report must be receptive to the general public, without the use of technical language that may be incomprehensible to the public, i.e. communication without limitations.

3. ***Dissemination of experience and publication of the report*** takes place through posting the report on platforms for free access, including websites, social media, electronic libraries, etc.

The process of organizing press conferences and presentations of project activity results by high school students is important. It will be appropriate to hold a set of events with the active involvement of the educational and scientific community, representatives of public organizations and movements, active citizens – residents of territorial communities.

In our opinion, the defined process should start with the creation of educational materials, namely: the development of training manuals that contain information about the experience of project implementation, the methods and techniques, used in the process, and the results obtained.

Audio-visual support through the preparation of educational presentations, video materials or webinars is indispensable for more effective reproduction of the acquired experience. In addition, the presentation and defense of an ecological project is possible through the use of scientific report, business game, video film demonstration, excursion, TV show, scientific conference, staging, dramatization, game with an audience, defense at a symposium, workshop, networking, dialogues of historical or literary characters, performance, travel, advertising, press conference, etc.

It is important to organize and conduct educational events: trainings, seminars or master classes for education seekers, teachers, representatives of local authorities and the public with the aim of spreading the acquired experience and teaching others.

The use of information resources due to the placement of information about the project on websites, blogs, and social networks is relevant in the conditions of modern digitalization in order to attract the attention of a wide audience and spread experience. And this is where special media support can be obtained thanks to cooperation with local mass media for the publication of articles, interviews or reports about the project.

Participation in conferences and forums provides unique opportunities to represent the results of project activities, find like-minded people, and form interschool project groups. Scientific and practical conferences, symposia for sharing experience, discussion panels, etc. also contribute to drawing attention to the raised issues of relevant institutions and experts, attracting potential sponsors to finance environmental projects. Therefore, a possible result of the specified activity will be the conclusion of partnership agreements or cooperation with other organizations, engaged in similar initiatives, for the exchange of experience and mutual support.

9. The process of monitoring the implementation of project activities.

In order to achieve the goal of the project activity of high school students in the conditions of overcoming the environmental consequences of the war in the represented sequence of operations, the process of monitoring the implementation of the project activity will play a significant role. This process involves the project manager making a decision to achieve the set goals, identifying the reasons for the destabilization of the work execution process, and justifying the adoption of managerial decisions regarding the adjustment of the execution of tasks before the possible damage to the execution of the project (failure to meet deadlines, exceeding the use of resources and cost, low quality, etc.). Analysis and regulation of project execution is a comparison of the actual execution with the planned, analysis of deviations, assessment of possible alternatives and adoption of corrective actions if necessary to eliminate undesirable deviations from the base level of indicators.

Therefore, it is worth starting with determining the correctness of identifying the specific goals and tasks of the project, which must be achieved in the process of carrying out project-research activities, their possible adjustment. It is also appropriate to establish success criteria for evaluating the performance of project tasks.

Planning of actions related to the realization of the process of control over the implementation of project activities should begin with the development of a detailed action plan, which includes the sequence of tasks and the distribution of responsibilities between experts.

Systematic monitoring of the progress of the implementation of project tasks in accordance with the action plan contributes to the implementation of control. In addition, it is important to monitor the performance of work in accordance with established quality and safety standards.

The intermediate result of the project activity control process is the data, obtained after systematic monitoring of project progress and results. It is necessary to prepare regular reports on the status of project implementation and achieved results. Risk correction and management is possible due to the identification of possible risks and the adoption of measures to prevent them or reduce their consequences. Timely correction of the action plan and project strategy based on the results of monitoring and evaluation enables better and more effective implementation.

The process of monitoring the implementation of project activities can become more effective under the condition of ensuring active interaction and communication with project participants, stakeholders and other interested parties.

And finally, an assessment of project results is carried out at the final stage in order to identify achievements and learn important lessons for future initiatives.

Control over the implementation of project activities helps to ensure effective performance of tasks, timely identification of problems and ways to solve them, as well as increasing the chances of achieving success in an environmental project.

10. The process of correcting the results of project activities.

The process of correcting the results of project activities is a complex multifactorial combination of construction and analysis of various model options based on a pedagogical experiment, in the process of which the optimal model is determined, which most effectively helps to solve problem situations and the limit of the ratio of positive and negative influences. The specified process is possible by implementing a number of sub-stages, namely: analysis of results, determination of causes of failures and shortcomings, development of corrective measures, implementation of corrective measures, monitoring and evaluation of correction results. Let's dwell in more detail on the interpretation of the isolated stages.

Analysis of the results as the first stage of correction involves the analysis of the results of the completed project activities. This includes assessment of achieved goals, identification of problematic aspects and identification of shortcomings in the performance of tasks.

It is advisable to ***determine the causes of failures and shortcomings*** after analyzing the results. It can be insufficient preparation, lack of necessary resources, problems in communication or project management.

Development of corrective measures takes place on the basis of identified problems in the form of a plan. This may include changes in the organizational structure of the project, improvement of task performance processes, additional training of participants, or involvement of additional resources.

Implementation of corrective measures continues after the development of a plan of corrections for its implementation. This may include conducting additional trainings, reviewing the distribution of tasks in the group, clarifying project goals, or attracting additional financial resources.

Monitoring and evaluation of correction results is carried out after the implementation of corrective measures in order to clarify their effectiveness. This will make it possible to identify problems in time and make the necessary changes to achieve the success of the project.

In general, the process of correcting the results of the project activities of high school students is an important component of the successful implementation of the project. The path to achieving the set goals can be multiple, and it is important to be able to adapt and make changes in the work process to achieve better results.

Each of these stages is important for the successful implementation of the project and the solution of environmental problems arising from the consequences of the war in a particular region. Implementation of practical actions in accordance with the developed strategy will help to achieve maximum results in restoring nature and improving the ecological situation.

The analysis of project activity as an innovative technology for the formation of the competence of education seekers in terms of the purpose, tasks, forms of manifestation, types, nature of contacts, structure, stages, form of presentation of results, implementation scenarios, criteria for the success of pedagogical efforts is represented in **Table 1.3**.

● **Table 1.3** Analysis of project activity as an innovative technology for forming the competence of education seekers

Signs	Project activity
1	**2**
Aim	Create conditions for the development of the ability to learn from one's own experience and that of others
Tasks	Create motivation (social importance), define a goal. Create an educational environment. Determine the method of achieving the goal (the sequence of operations that make up the method of action – the activity algorithm). Take into account the individual characteristics of each member of the group (determine roles, create so-called "job descriptions"). To determine what the seekers of education should learn as a result of the work. Be able to use simple examples to explain complex phenomena. Present possible ways of presenting situations to understand the research problem. Organize work (in small groups, individually). To have methods of organizing discussion of research methods, putting forward hypotheses, arguing conclusions, etc. in groups. Advise, monitor and adjust intermediate results. Have objective evaluation criteria and carry out evaluation
Manifestation forms	Quantitative measurability (all costs and benefits must be quantified). Time horizon of action (each project is limited in time). Target orientation (achievement of a specific goal, satisfaction of a specific need). Life cycle (emerges, functions and develops). System functioning (there is a relationship between project elements). Existence in a certain external environment, the elements of which have a significant impact on the project

Continuation of Table 1.3

1	2
Types	Research, creative, adventure (gaming), informative, practically oriented
Kind of contacts	Internal or regional (within one school, between schools (classes) within the region, one country (using telecommunications, the Internet). International (with the participation of representatives of different countries, not always possible due to the lack of necessary information technology facilities in educational institutions)
Structure	Determination of the need. Research (design analysis of existing objects). Designation of requirements for the design object. Development of original ideas, their analysis and selection of one. Planning. Manufacturing. Assessment (reflection)
Stages	Preparatory (content and technological aspect). Planning of project activities (problem formulation, development and planning of a specific action). Researching the problem and choosing a way to solve it; activity (problem solving, action implementation). Presentation of results. Reflective (evaluation and analysis of the obtained results)
Results presentation form	Action plan or program, video film, holiday, expedition, report, scientific journal, exhibition of drawings, booklets, websites, lapbooks
Scenario	Statement of the problem, its relevance. Expression of the hypothesis, argumentation of its provisions. The main part. Stages of work on the project, obtained results, their brief analysis. Conclusions. The results of the reflective evaluation of the project. Answers to other groups' questions (discussion)
Success criteria of pedagogical efforts	Information security – acquaintances, ideas, thesaurus, understanding. Functional literacy – perception of attitudes and explanations, written texts; ability to ask constructive questions, handle technical objects; safe work techniques. Technological skill – the ability to perform operations; manipulation of objects and means of work; achieving a given level of quality; ensuring personal safety. Intellectual readiness – verbalization of the operation; activity reflection; understanding the setting of educational tasks; sufficient amount of memory; the ability to compare objects by size, shape, color, material and purpose; additive perception of new information; the ability to use educational literature for rational planning of activities. Volitional preparedness – the desire to perform the assigned educational tasks; attentive attitude to the teacher's language and to the pedagogical situation; maintenance of work culture, social interaction; desire to perform tasks at a high level; tolerant attitude to comments, wishes and advice; choosing the pace of the task; successful overcoming of psychological and cognitive barriers; the ability to ask for and receive help

Therefore, the significance of project activities lies in accustoming students to independent, practical, planned and systematic work, fostering the desire to create a new or existing but

improved product, forming an idea about the prospects of its application; development of moral and labor qualities, generally valuable motives for choosing a profession and diligence. As it was mentioned earlier, special attention needs to be paid to maintaining interest in the specified process, monitoring intermediate and final results, and bringing intentions to the end.

1.4 PEDAGOGICAL SUPPORT OF THE PROJECT ACTIVITY PROCESS OF HIGH SCHOOL STUDENTS

The main idea behind project-based learning is that solving real-world problems engages learners and encourages serious thinking and action as students acquire and apply new knowledge in a problem-solving context.

During the implementation of project activities, the teacher performs various *role positions*:

– designer with the aim of designing the main provisions of the project activity of education seekers before its implementation;

– facilitator-consultant to encourage independent search for tasks and decision-making by asking research-type questions, creating a friendly atmosphere, encouraging the expression of one's own opinions;

– coordinator regarding the tracking of the search with the combination or opposition of individual statements, the performance of procedural functions.

Academician I. Bekh noted that the main attitude and orientation of the individual in early youth consists precisely in active self-determination, choosing one's own life path and finding equal relationships with adults. That is why such a natural growth of the desire for independence and democracy in communication with adults must necessarily lead the modern teacher to drastic changes in communication and perception of the student's personality. Thus, project-based learning not only encourages intelligently motivated activity in accordance with the age and educational interests of high school students, but also significantly transforms the role of the teacher in leading it. Therefore, the teacher necessarily turns into a consultant, adviser, coordinator, who convinces of his/her own rightness with the power of experience, wisdom, a strong argument, but not an order. By the way, the scope of the teacher's control over the process of personality development is not narrowing, but on the contrary, it is expanding [1].

The role of the facilitator is significant as the teacher works with students to formulate important questions, structure meaningful tasks, promote the development of both knowledge and social skills, and carefully evaluate what learners have learned during the project.

Pedagogical facilitation is a specific type of teacher's pedagogical activity, which aims to help the learner to realize him/herself as a self-worth, to support his/her desire for self-development, self-realization, self-improvement, to promote personal growth, the disclosure of abilities, cognitive capabilities, to actualize the value attitude towards people, nature, national culture based on the organization of auxiliary, humanistic, dialogic, subject-subject communication, partnership pedagogy, an atmosphere of unconditional acceptance, understanding and trust. This is a *multi-functional*

interaction, in which the teacher takes the position of a consultant-facilitator, acting as an "assistant" of those seeking education, a specialist who supports and accompanies the process of creating new experiences for customers of educational services; it is based on the principles of humanism, tolerance, polysubjectivity, trust and ensures the humanization of the entire educational process.

Pedagogical support of the project activity process of high school students includes a number of activities:

1. **Understanding the context**. The teacher must carefully research and understand the specifics of the effects of the war in a particular region, including their impact on the environment and youth. This will allow the teacher to properly adapt the program and approaches to the study and development of high school students.

2. **Creating a safe and stimulating environment**. War conditions can cause stress and anxiety among high school students. Educators must create a safe and supportive environment where high school students can freely express their thoughts and emotions and feel supported in their learning and project endeavors.

3. **Support of psychological well-being**. The teacher must have skills in working with psychological support of students, in particular stress management, development of emotional intelligence and promotion of a positive mental state of high school students.

4. **Learning problem-solving skills**. War can create many complex problems, and the educator must train learners to respond effectively to them. This may include interpersonal skills, conflict management, teamwork and decision making.

5. **Support flexibility and adaptability**. The conditions of war can change rapidly, so the teacher must be flexible and adaptive in his/her approaches to teaching and accompanying students.

6. **Stimulation of public activity**. A teacher can encourage high school students to actively participate in social and environmental initiatives to solve problems, caused by the consequences of the war.

In general, the teacher's support of the process of project activities of high school students in the conditions of the consequences of the war requires responsibility, empathy and flexibility. The teacher must be ready for various challenges and teach students to respond effectively to them in order to achieve success in educational and social processes. We have identified the following stages of the teacher's facilitating activity in the process of ecological design:

1. Planning and organization (the teacher must determine the tasks and goals of the project that correspond to the specific environmental problems, caused by the war in the region. He/she plans the steps of project implementation and organizes the work of high school students to achieve these goals).

2. Conducting training and acquiring skills (the teacher provides high school students with the necessary knowledge and skills in ecology and project management. He/she can conduct trainings, lectures, practical classes and use other training methods to prepare students for work on the project).

3. Assistance and support (the teacher provides support and advice to high school students throughout the entire process of working on the project. He/she solves possible problems that arise during work and stimulates students to achieve better results).

4. Team coordination (the teacher is responsible for coordinating the work of the entire team of high school students. He/she distributes tasks among the project participants, monitors their execution and stimulates cooperation and mutual assistance within the group).

5. Monitoring and evaluation (the teacher monitors the progress of work on the project and evaluates the results achieved. He/she analyzes the effectiveness of the measures that have been carried out and makes adjustments to the activity, if necessary).

6. Preparation and presentation of results (the teacher helps high school students to prepare and present the results of their project activities. This may include preparing presentations, writing reports, organizing exhibitions or other events for public presentation of project results).

Therefore, the teacher's actions in the process of implementing ecologically oriented project activities of high school students in the conditions of liquidation of the consequences of the war include planning, training, support, coordination, monitoring, evaluation, correction and preparation and presentation of the results of the conducted research [20].

The represented sequence of operations will help to structure and organize the work of high school students to successfully overcome the environmental consequences of the war through project activities, to ensure effective team management and the implementation of project tasks with maximum productivity. The defined algorithm is important for the successful implementation of project activities of high school students in the conditions of the consequences of the war in a specific region, as they allow to effectively coordinate the work of the team and to provide reporting to all interested parties.

DISCUSSION OF RESULTS

The presented material makes it possible to conclude about the complexity and responsibility of organizing and implementing an educational project as a didactic technology of learning and education, as it requires the creation and provision of opportunities to perform personally meaningful activities independently, in a team or individually with the maximum use of one's own capabilities. Project activity promotes self-discovery, realization of potentials, application of knowledge, representation of achieved results, feeling of "usefulness" for others.

The psychological-pedagogical possibilities of project technologies are quite high, because the project-research activity optimally ensures the subjective awakening and development of the personality of high school students, as it fully corresponds to their age needs and features.

Carrying out creative projects independently (albeit under the guidance of a teacher) ensures the acquisition of knowledge, its application, the formation of abilities and skills in various subjects/educational disciplines, and their integration. The use and acquisition of one's own experience becomes significant. The scientific research activities of the students also include peer-to-peer counseling. Achieving quality results is possible with the use of explanatory and illustrative, reproductive, problem-based and other teaching methods.

The use of project technology actualizes a person-oriented approach to education, the formation of soft skills in students: independence, responsibility, criticality, demandingness of oneself and others, perseverance in achieving the set goal, the ability to work both individually and collectively [23].

Therefore, the introduction of project-based and innovative pedagogical technologies during the formation of the competence of education seekers allows solving the problems of developmental, personal-oriented learning, differentiation, humanization, and the individual process of self-education.

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CHAPTER 2

ASSESSING STAKEHOLDER PERSPECTIVES ON ESSENTIAL SKILLS IN NANOSCIENCE: WHAT MATTERS MOST?

ABSTRACT

This article presents the results of a study analyzing the relative importance of cognitive, practical-operational, and motivational-value skills for professionals in the field of nanoscience. The study identifies the critical skills necessary for success in this interdisciplinary field based on a survey of various stakeholder groups, such as academic researchers, industry professionals, graduate students, policymakers, and ethicists. The findings show that all respondents consider critical thinking and problem-solving essential. Ethical responsibility and awareness of societal impact also play a significant role, especially among policymakers and ethicists. The identified differences in priorities between stakeholder groups highlight the need for improvements in nanoscience education to ensure the development of professionals equipped to address scientific-technical and ethical challenges. The article discusses potential directions for enhancing educational programs and policies.

KEYWORDS

Nanoscience, skills, critical thinking, ethical responsibility, education, professional training, interdisciplinarity.

Nanoscience and nanotechnology have become key fields in modern science, offering transformative potential in numerous sectors, including electronics, energy, healthcare, and environmental sustainability [1–3]. The interdisciplinary nature of nanoscience integrates principles of physics, chemistry, biology, and engineering, making it a rapidly developing field with far-reaching implications [4–6]. As the field continues to grow, so does the demand for professionals equipped with a diverse skill set capable of driving innovation, ensuring ethical practices, and addressing complex global challenges [7, 8].

Despite the growing importance of nanoscience, there remains a need for a deeper understanding of the specific skills required for professionals in the field. As nanotechnologies permeate scientific research and industry, the need for a comprehensive skill set encompassing technical

expertise, cognitive abilities, and ethical responsibility becomes increasingly critical [9]. Previous studies have emphasized the technical competencies needed for nanoscience, such as laboratory methods and computational skills [10, 11], but have often overlooked broader cognitive and motivational-value skills essential for success in such a multidisciplinary environment.

This study aims to analyze the relative importance of three fundamental categories of skills in nanoscience: cognitive skills, practical-operational skills, and motivational-value skills. By surveying a diverse group of stakeholders, including academic researchers, industry professionals, graduate students, policymakers, and ethicists, this research aims to understand the competencies most valued in the nanoscience community comprehensively. This analysis will help identify gaps in current educational and training programs, offer insights into the interdisciplinary demands of the field, and provide recommendations for aligning skill development with the evolving needs of nanoscience.

Understanding the skills needed for professionals in nanoscience is crucial for shaping educational programs and ensuring that future advances in nanotechnology are pursued ethically and responsibly. Thus, this study aims to contribute to both academic and industrial discourse on developing a workforce that is technically proficient, ethically aware, and capable of addressing the complex challenges associated with the rapid advancement of nanotechnologies.

2.1 UKRAINIAN CONTEXT

The ongoing war in Ukraine has revealed two major issues that directly impact the development of nanoscience and the training of specialists in this field. Firstly, the country faces an acute shortage of specialists capable of producing modern nanomaterials for electronic devices, which is critically important for the military-industrial complex [12]. Such materials are needed to make drones, night vision devices, photodetectors, and other components used in air defense systems [13]. This is a vital part of the strategy to ensure national security and strengthen Ukraine's defense capabilities in the face of ongoing threats. The lack of qualified specialists in this field limits the state's ability to meet the technological demands of war and defense effectively.

Secondly, the training of such specialists is also under pressure and requires rethinking in the context of wartime conditions. Specifically, several challenges are complicating this process:

1. Unpopularity of technical specialties among applicants. Due to stereotypes and underestimation of the importance of technical sciences during peacetime, specialties related to nanotechnologies and electronics were not widely popular among young people. The war has demonstrated how critical these skills and knowledge are, but the issue of attracting future students to these fields remains [14].

2. Mismatch between educational programs and labor market needs. Existing academic programs in nanoscience often do not align with the actual demands of the modern labor market, particularly in the context of military and defense technologies. This results in graduates not always possessing the necessary skills and competencies to integrate into the professional sphere, where dual-use technologies are in high demand [15].

3. Difficult conditions for specialist training. Many Ukrainian universities are forced to operate under wartime conditions, often working as "Universities without walls" [16, 17]. Much of the educational process has shifted to an online format, complicating access to laboratory research and experimental training, critically crucial for nanoscience. Additionally, universities are dispersed due to internal and external population migration, with many faculty members and students forced to work or study in other cities or countries [18]. The destruction, damage, or relocation of scientific and educational institutions has significantly reduced the potential for research development [19, 20]. The loss of intellectual capital due to emigration or the inability to work in wartime conditions is also a significant issue for the academic and scientific community [21, 22].

Considering these factors is crucial when planning the development of nanotechnologies in Ukraine. It is necessary to harmonize educational programs with labor market needs, support infrastructure for research and innovation, and create conditions to enhance the appeal of technical specialties among applicants. Successfully addressing these challenges will help Ukraine not only develop high-tech industries but also ensure the stable production of advanced nanomaterials for the defense sector.

For this development to be effective, it is essential to gain a deeper understanding of which skills stakeholders identify as critically important. This will allow for better alignment of educational programs with labor market needs, ensuring that future specialists not only possess technical knowledge but are also capable of responding to the challenges of interdisciplinary research, ethical responsibility, and innovative approaches. Moreover, taking into account the views of various stakeholders (academics, professionals, ethicists, policymakers) will help identify potential gaps in existing training programs and develop strategies to address them, thus contributing to the formation of a highly educated, adaptable, and responsible workforce capable of effectively operating in the face of modern global challenges.

2.2 LITERATURE REVIEW AND RESEARCH QUESTIONS

Developing a competent and adaptive workforce is a crucial condition for success in any industry. To achieve this, it is necessary to equip future professionals with a broad range of skills that will enable them to perform their professional duties effectively, adapt to new conditions, solve problems, and make informed decisions. In general, professional skills are divided into two main categories: "soft skills" and "hard skills" [23].

Soft skills encompass various interpersonal and communication abilities, such as emotional intelligence, teamwork, leadership, time management, critical thinking, and creativity. These skills are essential for successful interaction in both professional and personal relationships, ensuring effective communication and collaboration within teams [24]. The importance of soft skills lies in their universal nature, allowing professionals to adapt to changes, manage conflicts, and make informed decisions in complex situations. For instance, critical thinking is a fundamental tool for analyzing data and finding new approaches to problem-solving, which is particularly important in scientific and engineering activities [25].

Hard skills, in turn, include specialized knowledge and technical abilities directly related to a specific professional activity. These may include skills in working with equipment, software, research methodologies, and understanding of standards and regulations in particular fields [26]. Hard skills can often be measured or certified, making them an explicit criterion for assessing a specialist's competence [27]. In nanoscience, for example, hard skills include expertise in laboratory methods, computational technologies, and modeling skills, which form the basis for conducting precise scientific experiments.

Recently, researchers have increasingly focused on another critical class of skills: transversal or transferable skills [28]. These skills cover relevant competencies across multiple professional fields and can be transferred from one area to another, regardless of task or context specifics. Transversal skills include adaptability, creativity, critical thinking, communication abilities, teamwork, ethical responsibility, and digital literacy [29]. Their universality enables professionals to remain effective and productive amid rapid changes, which is especially important in today's world, where technology and market demands constantly evolve.

Creativity and innovation are becoming increasingly important in modern scientific and technological environments [30]. They allow for the discovery of unconventional solutions and the generation of new approaches to problem-solving, which is often crucial in research areas like nanoscience. Critical thinking enables the analysis and evaluation of information, making fact-based conclusions, and finding new opportunities for development and improvement.

Communication skills, particularly the ability to effectively communicate with colleagues, supervisors, partners, and broader audiences, are crucial for successful professional development [31]. They facilitate the effective exchange of ideas and information, which is necessary for working in interdisciplinary teams, which are common in fields like nanoscience. The ability to work in teams, supporting collective efforts and ensuring coordinated group work, is a vital part of modern scientific and industrial projects, where knowledge and experience from various fields need to be combined.

Adaptability and flexibility are increasingly significant in rapidly changing technologies and market demands [32]. Professionals must quickly adapt to new conditions, master new technologies, and adjust their work approaches. This is particularly important in science, where discoveries and technologies can rapidly change how research is conducted and solve problems.

Digital literacy, which includes proficiency with modern digital tools and technologies, is also integral to transversal skills [33]. With technological advancements and automation, many aspects of scientific and professional tasks require professionals to be proficient with digital data collection, analysis, and presentation tools. This ensures the quick and accurate completion of tasks, enhancing work efficiency.

Ethical awareness and social responsibility are essential in transversal skills [34]. With the rapid development of technologies like nanoscience, it is necessary to consider their impact on society and the environment, ensuring the responsible use of knowledge and achievements. This skill helps professionals make well-informed decisions, evaluating potential risks and long-term consequences of their actions.

Thus, transversal skills provide professionals with technical and interpersonal abilities as well as the capacity to adapt, think critically, and make responsible decisions in the face of rapid changes and complex tasks. Their universality and flexibility make these skills an important component of professional training in any field, including nanoscience, where various disciplines and work methods intersect.

Nevertheless, despite the importance of all skills – soft, complex, and transversal – there is a need to establish professional skills as they define a specialist's qualification and readiness for professional activities. Professional skills, often specific to each industry, are critical for successfully executing tasks as they provide the necessary knowledge and technical proficiency, enabling professionals to operate effectively within their field.

These skills form the foundation of professional competence, a vital indicator of a specialist's readiness to perform specific job functions and meet industry standards. Without appropriate professional skills, which may encompass knowledge of particular methods, equipment, software, or regulations, a professional cannot fully realize their potential and meet the demands of the modern labor market. Professional skills allow the transition from theoretical knowledge to practical application in real-world conditions, ultimately determining career success.

Professional skills can be divided into three main components: practical-operational skills, cognitive skills, and motivational-value skills. These components are essential across various disciplines and emphasize not only the ability to perform specialized tasks but also the broader competencies needed for critical thinking, problem-solving, and ethical decision-making.

Practical-operational skills are typically defined as specific abilities necessary to carry out tasks related to a particular field or profession [35]. These skills often involve hands-on experience with equipment, processes, or methodologies central to a professional's work. In many fields, technical proficiency is considered the foundation of professional activity, as it enables individuals to perform the core functions of their roles.

Cognitive skills, often referred to as "thinking" or "mental" skills, encompass abilities such as critical thinking, analysis, creativity, and the capacity to integrate knowledge from different disciplines [36]. These skills are widely recognized as critically important in professional environments requiring innovation, problem-solving, and adapting to new challenges. Research consistently highlights the importance of cognitive flexibility in navigating complex and dynamic work environments, as professionals must apply their knowledge in new ways.

Motivational-value skills focus on personal qualities, ethical standards, and values that guide a professional's approach to their work [37]. This category includes skills such as moral responsibility, passion for the field, and a commitment to continuous learning. These skills are crucial for fostering a sense of purpose and responsibility, encouraging professionals to strive for excellence and consider the broader societal implications of their work.

In the broader context of professional development, integrating practical-operational, cognitive, and motivational-value skills form a holistic framework that ensures professionals can grow and adapt to changing conditions. Literature from various fields emphasizes that relying solely on technical expertise is insufficient for sustained success [38]. Instead, integrating cognitive skills,

such as critical thinking and creativity, allows professionals to navigate complex problems and make informed decisions. Meanwhile, motivational-value skills, such as ethical awareness and passion, ensure their work aligns with personal and societal values.

While many studies have already explored the importance of cognitive, practical-operational, and motivational-value skills across different fields, nanoscience remains relatively under-researched in terms of the specific competencies required for professionals. As an interdisciplinary field, nanoscience integrates elements of physics, chemistry, biology, and engineering, making it more complex and requiring a unique combination of skills not typically demanded by more traditional disciplines.

Nanoscience is a relatively young field, and the precise requirements for professionals are still being formed. The literature primarily focuses on the technical development and application of nanotechnologies [39], often overlooking the human capital needed for their advancement [40]. As a result, there is a gap in understanding not only the technical but also the cognitive and motivational-value skills that professionals need to develop to work effectively in the rapidly progressing nanotechnology field and provide an ethical response to global challenges.

Given nanoscience's interdisciplinary nature and potential impact on society, it is essential to explore the balance between technical skills and broader competencies. Critical thinking, knowledge integration, and ethical responsibility are key elements shaping the future of nanoscience and contributing to its sustainable development.

Considering the gaps in the existing literature regarding the skills required for professionals in nanoscience, this study seeks to answer the following research questions:

1. What is the relative importance of cognitive, practical-operational, and motivational-value skills in nanoscience as perceived by key stakeholders?

2. How do different stakeholder groups, such as academic researchers, industry professionals, graduate students, policymakers, and ethicists, prioritize these skills in nanoscience?

These questions aim to provide a more comprehensive understanding of the skill sets needed for professionals in nanoscience and contribute to the broader discourse on how educational programs and professional development initiatives can be improved to prepare future generations for the field's evolving demands.

2.3 METHODOLOGY

2.3.1 SURVEY DESIGN

2.3.1.1 GENERAL FRAMEWORK OF THE STUDY

The design of our study involved surveying a broad range of stakeholders to validate and further explore the importance of identified skill components for future professionals in the field of nanoscience (**Fig. 2.1**).

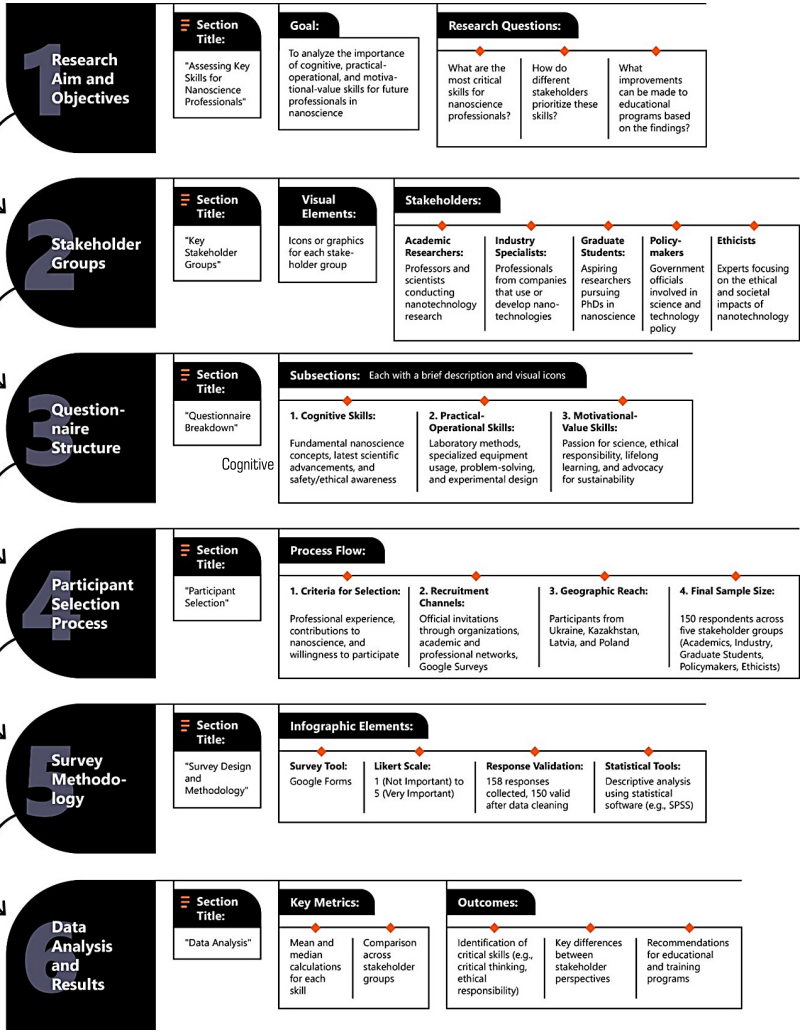

Fig. 2.1 The design of the study

This survey aimed to gather quantitative data on the perceived importance of each skill. A structured questionnaire was developed to assess the relative importance of cognitive, practical-operational, and motivational-value skills among nanoscience professionals. The questionnaire was divided into

several sections, each addressing one of the three primary skill types: cognitive, practical-operational, and motivational-value. The participants evaluated the importance of each skill on a Likert scale ranging from 1 to 5, where 1 indicated "not important", and 5 indicated "very important". This allowed us to collect quantitative data on the importance of each skill group among various stakeholders.

2.3.1.2 QUESTIONNAIRE DEVELOPMENT AND VERIFICATION

The questionnaire was developed based on criteria identified as key to studying professional skills in nanoscience. The main criteria for creating the questionnaire included scientific validity, practical relevance, and alignment with the research objectives. Each stage of development was closely linked to the needs of target stakeholder groups and international standards for conducting surveys in scientific research (**Table 2.1**).

Table 2.1 Criteria for questionnaire development

№	Criteria	Description
1	Relevance to research questions	The questionnaire questions were formulated based on the research questions that focused on cognitive, practical-operational, and motivational-value skills in the professional activities of nanoscience specialists. Each question assessed one of the three main types of skills identified in the study. Special attention was paid to ensuring that the questions directly addressed the scientific issues and allowed for a quantitative assessment of the importance of each skill for respondents from various professional spheres
2	Balance and comprehensiveness	During the questionnaire's development, we aimed to create a balanced structure that covered all key aspects of professional skills in nanoscience. We also ensured that all questions addressed different levels of professional development, from graduate students to experienced professionals
3	Simplicity and clarity	One key criterion was ensuring the questions were clear, understandable, and did not mislead the respondents. We avoided complex wording and overly specialized terminology to ensure that different groups of participants correctly understood the questions. Simplicity and clarity were fundamental as the survey covered various professional groups with varying levels of technical expertise

2.3.1.3 PROCESS OF VERIFICATION AND CONSENSUS AMONG AUTHORS

After the questionnaire was developed, each author conducted a thorough analysis and review of the individual questions. Each author reviewed the first version of the questionnaire, evaluating the questions based on criteria such as accuracy of wording, absence of bias, and logical consistency in its structure. All suggested changes or clarifications were carefully examined.

Following these individual reviews, several rounds of discussions were held, during which the authors agreed on the final version of the questionnaire. Each proposed modification's relevance and potential impact on the study results were assessed. In cases where disagreements arose, we referred to scientific sources or consulted external experts for further insights.

Once the critical revisions were agreed upon, the questionnaire was pilot-tested with a small group of respondents from different professional fields. The goal was to assess whether the questions were clear to the respondents, whether there were any difficulties in interpretation, and whether the collected data aligned with our expectations. Minor adjustments were made based on the feedback from this pilot testing.

After the pilot test and final discussions, the authors agreed on the questionnaire's structure and content. The final version was agreed upon, considering all feedback and recommendations, thus creating a tool that fully met the research objectives and adhered to scientific methodology standards.

Therefore, developing and verifying the questionnaire involved several stages of internal review and external testing, ensuring its accuracy, representativeness, and scientific validity.

2.3.2 STRUCTURE OF THE QUESTIONNAIRE

1. **The Introductory Section** of the questionnaire provided general information about the study's purpose and assurances of confidentiality. Participants were informed that their participation was voluntary and that the results would be used exclusively for scientific purposes.

2. **Cognitive Skills Section.** This section included questions aimed at assessing analytical thinking, knowledge of fundamental nanoscience concepts, and the ability to apply the latest advancements in the field. Specifically, participants were asked about:

a) proficiency in fundamental nanoscience concepts;

b) knowledge of the latest scientific achievements in nanoscience;

c) awareness of ethical aspects and safety protocols when working with nanotechnologies.

3. **Practical-Operational Skills Section.** This section evaluated the technical competencies necessary for laboratory and industrial work and the ability to operate specialized equipment. The questions addressed the following aspects:

a) proficiency in laboratory methods specific to nanoscience;

b) skills in operating specialized equipment;

c) ability to plan and conduct scientific experiments;

d) problem-solving abilities and application of critical thinking in research activities.

4. **Motivational-Value Skills Section.** This part of the questionnaire examined the participants' ethical responsibility, values, and motivation for continuous learning. The included questions covered:

a) passion for science and research;

b) commitment to lifelong learning and professional growth;

c) ethical awareness and responsibility in professional activities;
d) advocacy for sustainable practices and awareness of nanoscience's social contribution.

2.3.3 PARTICIPANT SELECTION

Participants were selected from five stakeholder groups representing a broad spectrum of the nanoscience community (**Fig. 2.2**). Efforts were made to ensure a diverse and representative sample, with the largest group consisting of academic researchers due to their direct involvement in nanoscience education and research. The smallest group included ethicists, reflecting the critical role of ethics in nanoscience. Stakeholders were identified and engaged through academic and professional networks, industry partnerships, and connections with educational institutions. The selection criteria included professional experience, contribution to nanoscience, and willingness to participate in the study. Participants were drawn from Ukraine, Republic of Kazakhstan, Republic of Latvia, and Republic of Poland.

The stakeholder groups included **academic researcher** (professors and scientists at universities and research institutions who are actively involved in nanotechnology research); **industry specialists** (specialists from companies that use nanotechnologies, including research and development departments, manufacturing, and application development); **graduate students** (PhD candidates pursuing degrees in nanoscience); **policymakers** (representatives of government and self-governing bodies involved in shaping science and technology policy); **ethicists** (experts specializing in the ethical and social aspects of scientific advances, particularly addressing the ethical implications of nanotechnologies).

We used multiple channels to recruit participants to ensure a wide and representative sample. Official invitations were sent through their organizations to highlight the importance of the study. Additionally, an online Google survey was used to simplify data collection and make it accessible to a broad audience. This multi-channel approach helped to mitigate potential biases and ensure a diverse and comprehensive dataset. It is worth noting that the selection process encountered several challenges, including ensuring balanced representation among stakeholder groups and overcoming potential biases. Furthermore, recruiting ethicists proved challenging due to their relatively minor presence in the nanoscience community, which required targeted outreach to ethics boards and professional organizations specializing in the ethics of science and technology.

At the survey stage, 158 completed questionnaires were initially collected from participants within the defined stakeholder groups. After thorough review and data cleaning, 150 questionnaires were retained for detailed analysis. Specific responses were removed due to issues such as incomplete answers. Additionally, responses containing inconsistencies or contradictions were carefully assessed and excluded to maintain data quality. The distribution of stakeholders who participated in the survey is shown in **Table 2.2**.

Table 2.2 Distribution of respondents by stakeholder categories who participated in the survey

Stakeholders	Number n, (%)
Academic researchers	68 (45.4 %)
Industry specialists	27 (18 %)
Graduate students	29 (19.3 %)
Policymakers	17 (11.3 %)
Ethicists	9 (6 %)

2.3.4 DATA PROCESSING AND ANALYSIS

The collected responses were processed using statistical software to perform descriptive analysis of the mean ratings of the importance of each skill by stakeholder group. Mean and median values for each skill were calculated, providing a comprehensive understanding of how different groups of respondents rate the importance of specific skills in professional activities.

2.4 RESULTS

2.4.1 COGNITIVE SKILLS

The data collected from the surveys were analyzed to determine the importance of skills in the cognitive cluster among various stakeholder groups in the field of nanoscience. **Table 2.3** below presents the average score for each skill on a scale of 1 (not necessary) to 5 (extremely important) for the different stakeholder groups. As shown in **Fig. 2.2**, the comparison of average and median scores for understanding fundamental nanoscience concepts, knowledge of recent advancements, and understanding ethical considerations remains consistently high across different stakeholder groups.

Table 2.3 Importance of cognitive cluster skills as evaluated by various stakeholder groups in the field of nanoscience

Skills	Academic researchers	Industry professionals	Graduate students	Policy-makers	Ethi-cists
Understanding fundamental nanoscience concepts	4.8	4.7	4.6	4.1	4.3
Knowledge of recent advancements and breakthroughs in nanoscience	4.7	4.8	4.5	4.2	4.3
Understanding safety protocols and ethical considerations in nanoscience	4.6	4.6	4.2	4.7	4.8

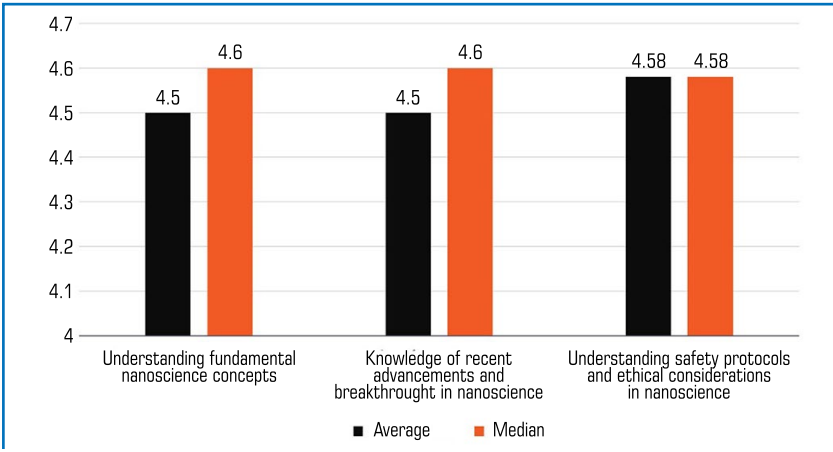

Fig. 2.2 Comparison of average and median importance scores of cognitive skills in the field of nanoscience based on survey results

All stakeholders rated the understanding of fundamental nanoscience concepts highly, with academic researchers giving the highest score (4.8) and policymakers the lowest (4.1). The average score for this skill was 4.5, with a median of 4.6, indicating substantial agreement on the importance of this fundamental skill. Academic researchers, industry professionals, and graduate students showed the highest alignment, with a slight decrease in importance noted by policymakers and ethicists. The observed variation suggests that while practitioners consider it essential, its perceived importance diminishes slightly among those focused on political and ethical aspects of science.

Knowledge of recent advancements and breakthroughs in nanoscience followed a similar pattern: industry professionals rated it the highest (4.8), while policymakers assigned a comparatively lower rating of 4.2. The average score for this skill was also 4.5, with a median of 4.6, demonstrating broad agreement among the groups. Interestingly, industry professionals emphasized staying up-to-date with the latest developments, likely reflecting the need to apply cutting-edge advancements in commercial and research settings. The relatively lower score from policymakers (4.2) may indicate that this group prioritizes broader strategic or regulatory issues over technical advancements.

Understanding safety protocols and ethical considerations in nanoscience showed a somewhat different distribution: ethicists and policymakers rated this skill the highest (4.8 and 4.7, respectively), highlighting the critical importance of this skill in their roles. Graduate students gave the lowest rating (4.2), suggesting a possible gap in emphasis on ethics and safety during early-career training. The average score of 4.58 and a median of 4.6 support the conclusion that this skill is highly valued across all groups but mainly by those responsible for guiding and regulating the ethical and safe use of nanotechnologies. The results indicate a potential for improving education and awareness of ethical considerations and safety for future professionals.

2.4.2 PRACTICAL-OPERATIONAL SKILLS

The assessment of practical-operational skills highlights their importance across all stakeholder groups, though the emphasis varies depending on the participants. The analysis reveals key trends in how different groups perceive the necessity of practical skills for effective work in nanoscience (**Table 2.4**, **Fig. 2.3**).

Table 2.4 Importance of practical-operational skills as evaluated by various stakeholder groups in the field of nanoscience

Skills	Academic researchers	Industry professionals	Graduate students	Policy-makers	Ethicists
Proficiency in laboratory methods specific to nanoscience	4.6	4.4	4.7	3.8	4.3
Competence in computational and analytical methods	4.9	4.6	4.4	4.1	4.0
Ability to plan and conduct scientific experiments	4.8	4.7	4.7	3.9	4.2
Critical thinking and problem solving skills	4.8	4.8	4.8	4.7	4.6

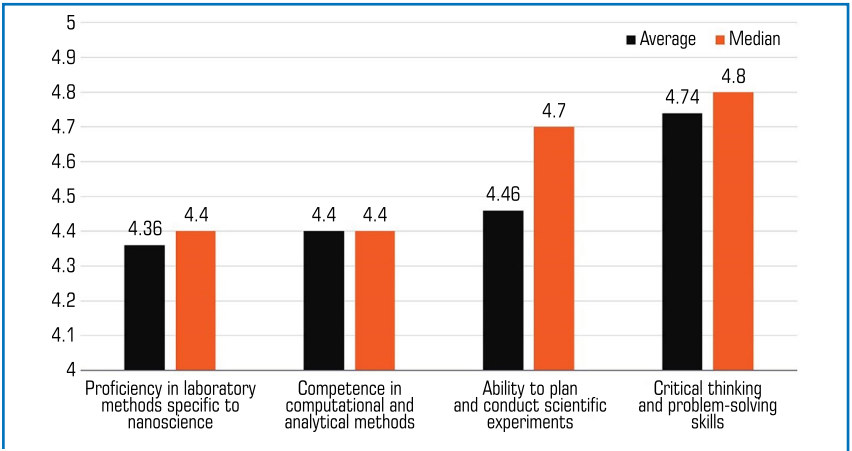

Fig. 2.3 Comparison of average and median importance scores of practical-operational skills in nanoscience based on survey results

Graduate students (4.7) and academic researchers (4.6) rated proficiency in laboratory methods specific to nanoscience highly, while policymakers gave it the lowest score (3.8). The average score

was 4.36, with a median of 4.4, indicating an overall positive evaluation of this skill. However, the divergence between academics and policymakers suggests that while practical laboratory competence is critical for researchers and students, it is considered less important in policy-related roles. Ethicists and industry professionals also rated it moderately high (4.3 and 4.4, respectively), underscoring its relevance in both practical and ethical contexts, though to a lesser degree in the political sphere.

Competence in computational and analytical methods received the highest rating from academic researchers (4.9), reflecting the growing importance of data analysis and modeling in nanoscience research. Industry professionals rated this skill slightly lower (4.6), followed by graduate students (4.4), policymakers (4.1), and ethicists (4.0). The average score was 4.4, with a median of 4.4. The lower scores among policymakers and ethicists suggest that computational skills are fundamental for technical roles but are less critical in non-technical functions. The high rating of this skill among academics and industry professionals highlights the need for solid analytical abilities in both research and applied settings.

The ability to plan and conduct scientific experiments was similarly rated by academic researchers, industry professionals, and graduate students (4.8, 4.7, and 4.7, respectively), emphasizing its importance for those actively engaged in scientific research. Policymakers gave it a lower score (3.9), and ethicists rated it moderately (4.2). The average score was 4.46, with a median of 4.7. The ratings reflect that while this skill is vital for research and professional roles, it is perceived as less critical for those in policy or ethics. Nevertheless, the high scores among researchers and students reinforce the central role of planning and executing experiments in advancing nanoscience.

Critical thinking and problem-solving skills received consistently high ratings across all groups, with academic researchers, industry professionals, and graduate students scoring it 4.8. Policymakers and ethicists also rated this skill at 4.7 and 4.6, respectively. The overall average was 4.74, with a median of 4.8, demonstrating that critical thinking and problem-solving are universally valued across all roles in nanoscience. This strong consensus suggests that tackling complex challenges is a crucial competency in research, industry, policy, or ethical contexts.

2.4.3 MOTIVATIONAL AND VALUE-BASED SKILLS

The analysis of motivational and value-based skills among different stakeholder groups highlights how personal commitment, ethical responsibility, and broader societal awareness are perceived in the context of nanoscience. The results lead to the following observations and conclusions (**Table 2.5**, **Fig. 2.4**).

Passion for science received the highest rating from academic researchers (5.0), reflecting deep personal and professional dedication to their field. Graduate students also displayed significant enthusiasm (4.6), while industry specialists rated it slightly lower (4.3). Policymakers (3.9) and ethicists (4.0) rated this skill the lowest, likely reflecting their roles' more strategic and regulatory nature. The overall average score was 4.36, with a median of 4.3. This suggests that while passion

for science is fundamental for those directly engaged in research and development, it is perceived as less critical in policy or ethics-related roles, where objective decision-making may take precedence over personal passion.

Table 2.5 Importance of motivational and value-based skills as evaluated by various stakeholder groups in the field of nanoscience

Skills	Academic researchers	Industry professionals	Graduate students	Policy-makers	Ethicists
Passion for science	5.0	4.3	4.6	3.9	4.0
Commitment to lifelong learning and professional growth	4.7	4.5	4.3	4.2	4.1
Ethical awareness and responsibility in professional activities	4.5	4.3	4.4	4.7	4.9
Advocacy for sustainable practices in nanoscience	4.1	4.2	4.0	4.8	4.8
Awareness of nanoscience's social contribution	4.2	4.1	4.3	4.9	4.9

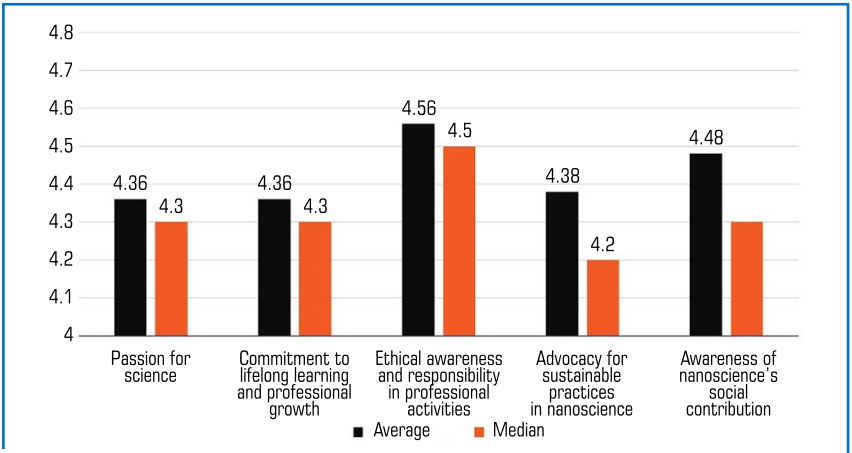

Fig. 2.4 Comparison of average and median importance scores of motivational and value-based skills in nanoscience based on survey results

Commitment to lifelong learning and professional growth was rated highly by academic researchers (4.7) and industry professionals (4.5), emphasizing the importance of continuous development to maintain expertise in nanoscience. Graduate students rated this skill slightly lower (4.3), perhaps because they are focused on completing formal education. Policymakers (4.2) and

ethicists (4.1) also recognized the importance of lifelong learning, albeit to a lesser extent. The average score of 4.36 and the median of 4.3 indicate broad recognition of the value of ongoing professional growth across all groups, with researchers and industry professionals prioritizing this aspect.

Ethical awareness and responsibility in professional activities received the highest rating from ethicists (4.9), reflecting their direct involvement in ethical considerations. Policymakers also emphasized this skill (4.7), likely due to their role in ensuring responsible scientific practices. Academic researchers (4.5), industry professionals (4.3), and graduate students (4.4) rated it similarly, with a slightly lower emphasis, possibly because they are more focused on technical expertise. The overall average score of 4.56 and the median of 4.5 reflect the crucial role of ethics across all areas of nanoscience, though mainly for those tasked with regulating and overseeing its use.

Policymakers and ethicists placed the most significant emphasis on advocacy for sustainable practices in nanoscience (4.8 each), reflecting their focus on the long-term consequences and responsible development of technologies. Academic researchers (4.1), industry professionals (4.2), and graduate students (4.0) rated this skill lower, suggesting that sustainability is less of a priority in their daily work compared to broader societal and regulatory concerns. The average score of 4.38 and the median of 4.2 indicate a growing recognition of the need for sustainability, especially among those in leadership and policy roles.

Awareness of nanoscience's social contribution followed a similar pattern: policymakers and ethicists rated it the highest (4.9 each), while researchers, industry professionals, and graduate students rated it slightly lower (4.2, 4.1, and 4.3, respectively). The average score was 4.48, with a median of 4.3, reflecting the importance of understanding nanoscience's contribution to society. This skill is particularly emphasized by those who observe the broader implications of scientific achievements, such as policymakers and ethicists. In contrast, those directly involved in research and development prioritize technical skills over societal awareness.

In summary, all stakeholder groups recognize motivational and value-based skills as necessary, though the level of emphasis varies according to their roles. Passion for science and commitment to lifelong learning are most important for those directly involved in research and industry. At the same time, policymakers and ethicists prioritize ethical responsibility, sustainability, and social awareness. These findings suggest the need for a balanced approach to developing future nanoscience professionals that fosters both technical expertise and a solid commitment to ethical and societal considerations.

2.5 MAIN OBSERVATIONS

2.5.1 COMPARATIVE ANALYSIS

The results of this study provide a comprehensive understanding of the relative importance of cognitive, practical-operational, and motivational-value skills in nanoscience. Among the

cognitive skills, understanding safety protocols and ethical considerations received the highest average score (4.58), reflecting growing concerns about safety and moral responsibility in nanotechnologies. Consistently high ratings across stakeholder groups indicate broad agreement on the critical role of these skills in nanoscience, especially among policymakers and ethicists (**Fig. 2.2**). In contrast, knowledge of recent advancements in nanoscience received a slightly lower overall rating (4.5), with policymakers assigning it a lower priority, potentially reflecting their broader focus beyond cutting-edge technological developments.

Regarding practical-operational skills, critical thinking and problem-solving were identified as the most valuable across all groups, with a notably high average score of 4.74 (**Fig. 2.3**). This finding highlights the importance of these skills in tackling complex challenges in nanoscience, transcending technical expertise to include the ability to innovate and solve problems in unpredictable situations. At the same time, proficiency in laboratory methods and competence in computational and analytical methods showed varying importance depending on the stakeholder group. While researchers and industry professionals rated these skills highly, policymakers assigned them lower scores, likely due to their reduced involvement in practical research activities.

In the motivational-value skills category, ethical awareness and responsibility stood out with an average score of 4.56, especially emphasized by ethicists and policymakers (**Fig. 2.4**). Lower scores from students and industry professionals suggest that ethical considerations may not be as deeply integrated into their everyday work or education. Interestingly, passion for science received the highest score from academic researchers (5.0), highlighting its significance for those at the forefront of innovation in nanoscience. Policymakers, however, rated it lower (3.9), indicating a potential difference in how intrinsic motivation is perceived across different sectors.

These findings underscore the need for a balanced approach to developing future professionals in nanoscience, fostering technical knowledge and a solid commitment to ethical and societal considerations. The variation in skill importance across stakeholder groups reflects the diverse nature of the nanoscience field, suggesting that educational and training programs should be tailored to meet the specific needs of different professional roles.

2.5.2 CATEGORY AVERAGES

Cognitive skills had the highest overall average score (4.53), suggesting that understanding core concepts, ethical considerations, and safety protocols is widely seen as essential across all stakeholder groups.

Practical-operational skills followed closely, with an average score of 4.49, reflecting the importance of hands-on expertise and the ability to execute technical tasks in the lab or industry settings.

Motivational-value skills had the lowest average score (4.43), indicating that while personal dedication and ethical responsibility are valued, they may be secondary to technical knowledge and problem-solving abilities.

2.5.3 STAKEHOLDER GROUP ANALYSIS

Academic researchers rated cognitive skills the highest (4.7), followed by practical-operational skills (4.68) and motivational-value skills (4.5). This trend strongly emphasizes theoretical understanding and technical expertise in research environments.

Industry professionals placed the most significant importance on practical-operational skills (4.6), indicating that real-world technical abilities are crucial for success in industrial applications. Cognitive skills were also highly valued (4.53), while motivational-value skills were rated lower (4.3).

Graduate students showed a similar pattern, with practical-operational skills receiving the highest score (4.53), reflecting their need for hands-on experience as they transition into professional roles. Cognitive skills (4.5) and motivational-value skills (4.33) followed.

Policymakers rated motivational-value skills the highest (4.5), emphasizing the importance of ethical responsibility and societal contributions in their decision-making processes. Cognitive skills (4.3) and practical-operational skills (4.0) were rated lower, likely due to the strategic nature of their work.

Ethicists emphasized motivational-value skills (4.6), particularly ethical awareness, followed by cognitive skills (4.4). Practical-operational skills (4.03) were rated lower, reflecting their focus on societal and ethical implications rather than technical expertise.

2.6 DISCUSSION

The comparison of skill categories reveals several significant trends. First, cognitive skills (**Table 2.3**, **Fig. 2.2**) are regarded as the most critical across most stakeholders, particularly academic researchers and policymakers. This finding underscores the central role of theoretical knowledge, ethical considerations, and an understanding of safety protocols in nanoscience. These skills are fundamental for conducting safe and responsible research and ensuring that nanotechnologies are applied ethically.

In contrast, practical-operational skills were rated highest by industry professionals and graduate students who are directly involved in applying nanoscience in real-world settings (**Table 2.4**, **Fig. 2.3**). This highlights the importance of hands-on technical abilities in professional and industrial contexts, where the capacity to operate equipment, run experiments, and solve technical problems is essential for success. The lower emphasis on these skills by policymakers and ethicists suggests that their roles focus on broader ethical and regulatory issues rather than technical competencies.

Motivational-value skills (**Table 2.5**, **Fig. 2.4**), such as a passion for science, ethical responsibility, and lifelong learning, were rated highest by policymakers and ethicists, reflecting their focus on nanotechnology's societal and ethical dimensions. Interestingly, these skills were less

emphasized by academic researchers and industry professionals, who placed greater importance on cognitive and practical skills. This divergence suggests that different sectors of the nanoscience field prioritize skills based on their specific roles and responsibilities. For example, researchers and industry professionals may prioritize technical expertise, while policymakers and ethicists are more concerned with long-term sustainability and ethical considerations.

Overall, the results suggest that educational and training programs for nanoscience professionals should be balanced. While cognitive and practical skills are critical for scientific and technical success, motivational-value skills such as ethical awareness and societal responsibility should also be integrated into curricula. This is particularly important given the growing ethical challenges posed by emerging technologies and the need for future professionals to navigate both scientific and societal issues.

In conclusion, this study highlights the varied but interconnected importance of cognitive, practical-operational, and motivational-value skills in nanoscience. The findings suggest that a comprehensive approach to education and professional development is essential for preparing well-rounded nanoscience professionals who are technically proficient, ethically responsible, and socially aware.

2.7 RECOMMENDATIONS

This section presents a set of targeted recommendations to enhance the development of future professionals in nanoscience, focusing on three key levels: educational institutions, industrial and research organizations, and policymakers and ethical bodies. These recommendations address the unique skill requirements identified in the study and provide actionable guidelines to promote a comprehensive approach to professional development in nanoscience. By implementing these recommendations, each stakeholder group can contribute to creating a highly competent workforce, ethically responsible innovation, and sustainable growth in nanotechnology.

2.7.1 RECOMMENDATIONS FOR EDUCATIONAL INSTITUTIONS

Educational institutions should focus on integrating multidisciplinary programs emphasizing cognitive and practical-operational skills (**Table 2.6**). This ensures that students gain a solid theoretical foundation and acquire practical experience necessary for their future work in research and industry settings. Additionally, courses on ethical considerations and social responsibility should be included to enhance motivational-value skills, particularly the awareness of ethics in science and technology. This approach will cultivate responsible professionals capable of making informed decisions. Furthermore, institutions must encourage lifelong learning by offering opportunities for professional growth beyond formal education. This will allow graduates to remain competitive in the rapidly evolving nanotechnology landscape.

Table 2.6 Recommendations for educational institutions

No.	Recommendation	Goal	Purpose
1	Integrate a multidisciplinary curriculum	Develop cognitive and practical-operational skills	Prepare students for research and industry
2	Include ethics and social responsibility modules	Enhance motivational-value skills	Foster responsible attitudes towards ethics
3	Encourage lifelong learning	Promote continuous professional development	Ensure graduates remain competitive

2.7.2 RECOMMENDATIONS FOR INDUSTRY AND RESEARCH ORGANIZATIONS

Industry and research organizations should prioritize hiring candidates with practical, solid skills, ensuring they can handle the technical demands of data processing, experimentation, and equipment operation (**Table 2.7**). A critical aspect is collaboration with educational institutions to offer internships and joint research opportunities, bridging theoretical knowledge with the practical needs of the industry. This collaboration allows students to gain real-world experience, preparing them for immediate employment upon graduation. Moreover, organizations should incorporate ethical responsibility into their innovation processes, ensuring that new technologies are developed considering social and environmental impacts, promoting sustainable development and corporate responsibility.

Table 2.7 Recommendations for industry and research organizations

No.	Recommendation	Goal	Purpose
1	Prioritize practical-operational skills in recruitment	Enhance technical competence	Ensure readiness for technical tasks
2	Collaborate with educational institutions	Foster collaboration for improving professional training	Provide practical experience opportunities for students
3	Incorporate ethical responsibility into innovation	Promote responsible innovation	Support sustainable development and social responsibility

2.7.3 RECOMMENDATIONS FOR POLICYMAKERS AND ETHICAL BODIES

Policymakers and ethical bodies should focus on developing comprehensive regulatory frameworks that govern the safe and responsible use of nanotechnologies (**Table 2.8**). This will establish clear standards that build public trust and support sustainable growth in the sector. Additionally, promoting ethical training programs for scientists and professionals will increase awareness of ethical standards and responsibility in professional activities, fostering a culture of ethical

responsibility across industries. It is also crucial to promote public engagement and raise awareness about nanotechnologies by encouraging dialogue on their societal and environmental impacts. This will ensure transparency in decision-making and consider public needs and concerns when implementing new technologies.

Table 2.8 Recommendations for policymakers and ethical bodies

No.	Recommendation	Goal	Purpose
1	Develop comprehensive regulatory frameworks	Ensure safety and responsibility in the use of nanotechnologies	Create clear regulatory standards
2	Support ethical training programs	Increase ethical awareness and responsibility in research	Foster a culture of ethical responsibility
3	Promote public engagement and awareness	Engage society in discussions on the impact of nanotechnologies	Ensure transparency and informed decision-making

By addressing these multi-level recommendations, stakeholders across education, industry, and policy can collectively ensure that nanoscience professionals are technically proficient, ethically responsible, and socially aware. These efforts will contribute to nanotechnology's accountable and sustainable growth, ensuring that it meets the scientific community's and society's needs.

2.8 LIMITATIONS AND PROSPECTS FOR FURTHER RESEARCH

This study presents valuable insights into the importance of cognitive, practical-operational, and motivational-value skills among stakeholders in nanoscience. However, several limitations should be acknowledged. First, the survey scope was limited to a specific set of countries (Ukraine, Republic of Kazakhstan, Republic of Latvia, and Republic of Poland), which may not fully capture global variations in the perceptions of nanoscience skills. Expanding the study to include a broader range of countries with diverse technological and educational landscapes would provide a more comprehensive understanding of how these skills are prioritized internationally.

Second, the sample size, though sufficient for preliminary analysis, may not fully represent the breadth of expertise across all stakeholder groups, particularly for smaller groups such as ethicists. Increasing the number of participants, especially in underrepresented categories, would strengthen the reliability of the findings and allow for more nuanced conclusions.

Another limitation lies in the scope of skills assessed. While the study focused on cognitive, practical, and motivational-value skills, other critical areas, such as leadership, interdisciplinary collaboration, and entrepreneurship, were not explored. Future research could expand the framework to include these additional skill sets, which are increasingly relevant in the evolving landscape of nanoscience.

In terms of prospects for further research, it would be beneficial to conduct longitudinal studies to observe how the importance of these skills shifts over time, particularly as the field of nanotechnology advances. Additionally, exploring how these skills are taught and developed in different educational systems could yield valuable insights into best practices for curriculum design. Further research might also investigate the impact of integrating ethics and sustainability into nanoscience education and training on graduates' professional outcomes and societal contributions.

Finally, a deeper exploration of the relationship between skill development and career success in nanoscience could provide practical guidance for educators and employers. This would help align educational programs with the industry's real-world needs and ensure that future professionals are well-prepared for the field's challenges.

CONCLUSIONS

This study provides valuable insights into the relative importance of cognitive, practical-operational, and motivational-value skills in nanoscience based on the perspectives of various stakeholders, including academic researchers, industry professionals, graduate students, policymakers, and ethicists.

The findings indicate that critical thinking and problem-solving skills are universally recognized as the most important competencies, highlighting the need for educational and training programs to prioritize the development of these skills across all sectors. While cognitive and practical skills, such as competence in computational methods and proficiency in laboratory techniques, are highly valued by researchers and industry professionals, the growing importance of ethical awareness and sustainable practices is particularly evident among policymakers and ethicists. These differences underscore the interdisciplinary demands of nanoscience, where a solid ethical foundation and consideration of societal impact must complement technical expertise.

The study also revealed a potential gap in integrating ethical responsibility into training graduate students and early-career professionals. Addressing this gap through deeper incorporation of ethical considerations into nanoscience curricula can help ensure that future professionals are skilled and aware of the broader consequences of their work.

From a policy perspective, the results suggest that decision-makers should focus on fostering innovation and responsibility in nanoscience. The strong emphasis on sustainable development and societal contribution reflects a growing recognition of the need for technological advancements to align with long-term social and environmental goals.

In conclusion, the dynamic nature of nanoscience requires a balanced approach to skill development, combining cognitive, technical, and ethical competencies. As the field continues to evolve, future efforts should focus on creating more holistic educational frameworks and policies that ensure the next generation of nanoscientists is well-equipped to address the complex challenges of the future.

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CHAPTER 3

DEVELOPMENT OF PERSONAL AND PROFESSIONAL QUALITIES OF THE FUTURE TEACHER UNDER THE CONDITIONS OF UPDATE OF THE INFORMATION CULTURE OF SOCIETY

ABSTRACT

Modern society needs citizens who are creators of their own lives and contribute to innovation and development of society. The problem of developing the personal and professional qualities of the future teacher in the conditions of updating the information culture of society requires special attention, in particular, the search for ways to optimize the social formation of young professionals, the formation of their social maturity as a prerequisite for the individual's path to successful self-affirmation and interaction with the social environment.

One of the most relevant trends in the development of modern society is the informatization of social reality. The impact of information and communication technologies on society is wide and multifaceted, especially in the economy, culture and education. Today, information has become a leading factor in socio-economic, political-legal and spiritual-cultural development of modern society. Information and communication technologies increasingly influence various spheres of life, science, and education. It is also natural that with qualitatively new transformations in social life caused by the process of informatization, the question of the peculiarities of the integration of the individual into the social system has become topical.

Under the conditions of the introduction of informatization into all areas of human life and activity and under their direct influence, a complex of needs is formed in it, which corresponds to the development of the information society: in self-realization through the use of information and communication technologies in all aspects of one's existence; in self-development in the conditions of the formation of the information society; in constant updating and continuous improvement of professional capabilities. The realization of these needs is one of the fundamental conditions for the formation of social maturity of a person.

As a separate criterion of the social maturity of the future teacher, the ability for informational self-development is singled out. The content of the ability to informational self-development is revealed through the following indicators: the need for constant updating of knowledge; professional mobility and adaptability in the information society; responsibility when working with technical means; relation to information, objects and phenomena in the information environment; critical attitude to information consumption; self-assessment and reflection at the level of informational contacts.

KEYWORDS

Future teacher, personal and professional qualities, social maturity, self-development, information culture of society.

The problem of developing the personal and professional qualities of the future teacher in the conditions of updating the information culture of society, in particular, the search for ways to optimize the social formation of young professionals, the formation of their social maturity as a prerequisite for the individual's path to successful self-affirmation and interaction with the social environment, is gaining particular importance.

The epochs of change in society make it necessary to compare and reconcile accumulated scientific experience with new facts of reality. In addition, social changes that provide a new point of reference, change the usual criteria of attitudes to the world, put forward new problems for science actualize its contradictions, formulate new tasks.

The relevance of studying the problem of formation and development of a mature personality is caused not only by the demands of science, but also by the requirements of life. An actively developing society sets increased demands on an individual, expecting the adult to be active, independent, self-sufficient and personally responsible, to construct a personal system of values and identity. Today's society needs citizens who are creators of their own lives and who promote innovation and development of the world. Therefore, solving the problem of understanding the essential features, structure, mechanisms and conditions of the formation of a mature personality will contribute to the development of society as a whole, since only a mature individual is able to create a harmonious and mature world around oneself.

It should be noted that the issue of social maturity has been given attention by researchers. It has become the subject of a thorough study mainly in such fields of scientific knowledge as philosophy, psychology, pedagogy, sociology.

Owing to the research of psychologists: K. Abulkhanova-Slavskaya, B. Ananiev, O. Asmolov, L. Bo-zhovich, D. Leontiev, M. Pokras et al., we have deep understanding of the social maturity phenomenon.

O. Andrienko, O. Ganzha, M. Yemelyanova, O. Kameneva, M. Lebedyk, V. Radul, O. Soldatchenko, O. Temruk et al. studied the social maturity of the individual in the context of the future teacher's training.

One of the most pressing trends in the development of modern society is the informatization of social reality. The impact of information and communication technologies on society is wide and multiaspect, especially in the areas of economy, culture and education.

Today, information has become a leading factor in the socio-economic, political-legal and spiritual-cultural development of modern society. Information and communication technologies are increasingly influencing different spheres of life, science, education. It is also natural that with the

qualitatively new transformations in the life of society caused by the process of informatization, the issue of the peculiarities of the integration of an individual into the social system is actualized.

S. Afanasiev, S. Duka, T. Eriksen, M. Kastels, M. Moiseiev, I. Negodaiev, S. Rastorguiev, E. Toffler et al investigated the problem of personality formation in the information society.

In the conditions of informatization introduction in all spheres of life and human activity as well as under their direct influence, there forms a complex of needs that corresponds to the development of the information society: in self-realization through the use of information and communication technologies in all aspects of one's existence; in self-development in the conditions of formation of the information society; in constant updating and continuous improvement of professional capabilities.

The realization of these needs is one of the fundamental conditions for the development of person's social maturity.

The analysis of the specialized literature gives us the right to say that there are almost no studies that integrate these issues into one whole, which is comprehended in the social and philosophical aspects. In the current scientific discourse, there is no consensus on the integrity of the individual, one's social maturity in the information society, and thus gives the topic of research a problematic character.

The aim of the study is to characterize and test ways of developing the social maturity of the future teacher in the context of updating the information culture of society.

In order to solve the formulated tasks in the research, we have used a set of interrelated theoretical and empirical methods of pedagogical research:

– theoretical: learning, analysis and generalization of scientific literature to familiarize with the state of the problem under study, systematization, comparison, generalization of scientific and theoretical data obtained;

– empirical: questionnaire, pedagogical experiment – to check the effectiveness of the ways of development of social maturity of future teacher in the conditions of updating the information culture of society;

– methods of mathematical statistics in order to verify the accuracy of the study results.

There are many approaches in the scientific literature to construct the structure of social maturity and to identify the components that are most important and play the role of the "supporting element", "core" of social maturity [1].

Before beginning the analysis, it should be mentioned that at least two theoretical and methodological approaches exist to reveal the essence of the concept of "maturity". First, maturity is understood as a separate period in the development of person, the longest and most productive in the sense of industrial relations. In terms of time limits, it is limited to the end of adolescence and the beginning of aging. Second, maturity is interpreted as a certain integral property of the individual, which consists in the possession of certain qualities that contribute to the harmony of human interaction with the environment and themselves, an effective solution to life's tasks. It should be first noted that maturity is understood not as a period, but as a quality of personality, so the first

approach is considered by us only as a guideline in the temporal plan of human development, and the other is taken as the basis in the study. The approach we have chosen rather studies not the notion of maturity at all, but maturity as a concrete manifestation of the process of maturation in a person's relationships and personal qualities.

K. Baker and G. Varga argue that this quality should be distinguished from physical maturity, which is manifested in the final formation of the organism and its preparation for the fulfillment of all basic functions, as well as from psychological maturity, which is at the level of development sufficient for effective activity cognitive processes, emotions and will [2].

The dictionary of psychology states that maturity is a state of full personality development, complete readiness for anything. Her associated with growing up personality, readiness for the highest development spiritual, intellectual and physical abilities. To the defining features of mature personalities belong to developed sense responsibility, the individual 's need to care for others, the ability to be active interaction with others, effective using their own knowledge and practical skill constructive solution complex life problems on the way to self-realization [3].

Psychologist G. Olport [4] names maturity temporary interval, process, that step by step takes place in time and space. It continues for everything life depends on it from motives personality.

The author singles out such basic characteristics of psychologically mature personalities: mature person has wide the limits of "I". She can look on the side, to see your positive and negative features, its social activity (communication with others, interest a certain type of activity, desire to solve political and religious the question is yours life and life others); mature person always ready for warm social relationship that appear in the following categories: friendly intimacy and compassion. It characterizes the first ability a person worry deep love, respect, understanding for relatives and close people. The second is understanding, empathy and tolerance for others; mature person perceives himself/herself objectively and always emotionally stable. She adequately treats her own the shortcomings also led to the fact that her maybe to annoy. It is explained skills cope with oppression, feelings anger and guilt. That's it attitude towards life has a positive effect on the personality itself and on people who are located next to mature person realistically perceives surrounding world, own experience and harassment; mature person perceives himself/herself positively, therefore he is ready for self-discovery. Important component of self-knowledge is humor because he allows people to see and perceive extremely absurd aspects own and other people's lives situations; from Rila man has integral vital philosophy, and therefore can single out important things in their own life thanks to formed by system values [4].

In the study of K. Abulkhanova-Slavska [5], it is stated that a mature person strives to realize his/her life line, that is, to realize himself/herself as the subject of his/her personal life. The same opinion is held by V. Safin [6], emphasizing that an indicator of personality maturity is self-awareness as a subject capable of objectively perceiving the surrounding world and relationships, ready to create and perform socially significant activities.

Maturity of the individual is manifested in various types of culture and is determined by social self-determination, activity and degree of responsible attitude to the intended goals, the nature and

quality of planning to achieve them. The value orientation of the individual is a necessary element of the content of a person's maturity, a necessary link in the determination of his real actions and deeds in the field of work, knowledge and communication. Activity is a human way of relating to the world. M. Kvetnoy singles out the general points of human activity as a whole system: "By its content, activity is a process of practical, subject-transformative assimilation by a person of the objective world, which is the very "self-affirmation of a person". According to the method of regulation, human activity unfolds on the basis of consciously defined goals (ideal projects, plans, programs, forecasts). According to the means of implementation, human activity is implemented through the mechanisms and products of culture historically formed and mastered by the subject of activity [7].

Summarizing the results of scientific research on the interpretation of the essence of the concept of "maturity" makes it possible to define "social maturity".

In the large modern encyclopedia of pedagogy, "social maturity" is defined as the level of formation of attitudes, knowledge, skills and ethical qualities, which is sufficient for the voluntary, skillful and responsible performance of the entire set of social roles characteristic of an adult [8]. In the narrower sense, this term means a set of personal qualities of the subject, which constitute his/her ability to interact with other people in the process of achieving common goals [9].

According to N. Andrienkova, social maturity is a stage of personality that occurs at the end of socialization [10]. We do not agree with this statement. Socialization occurs throughout a person's life. Therefore, social maturity is a characteristic of the impact of the socialization process on the holistic development of the individual. Social maturity is unthinkable without the process of socialization of the human individual.

According to L. Kogan, social maturity "is a systemic quality, state, degree of development of the personality system as a whole. The social maturity of an individual is characterized by the degree of assignment of social relations and their implementation in practical activities, that is, the degree of development of the socially essential forces of the individual, his worldview, knowledge, abilities, needs, skills, abilities, social feelings" [11]. It is necessary to reflect on events, by degree social and personal coherence in them interests about social maturity personality.

L. Kogan refers to the most general, albeit insufficient, signs of social maturity:

a) compliance of this personality with the main essential characteristics of the historical personality type;

b) conformity of her lifestyle, her life activities to the requirements of the environment to the lifestyle of each individual [11].

M. Lebedyk correlates the concept of "social maturity of an individual" with the categories "socialization of an individual", "sociality of an individual" and "social type of an individual" and reflects the specific historical and cultural conditions of the development of society and serves as a benchmark for those social qualities that students must master. The scientist points out that in the process of socialization, the student's sociality is formed and developed in accordance with the "requirements" and "goals" of society, where sociality presupposes the presence of collectivity and

general actions of students, their social groups and collectives, which make them capable of acting as subjects of social production, the subject of history [12].

Analyzing social maturity in the context of the formation of the professional orientation of an individual, T. Komar comes to the conclusion that social maturity is one of the main socially determined substructures of the personality, therefore, according to the scientist, it exerts a significant influence on the formation of the professional orientation and professional maturity of the individual, which according to in its essence, it is also the result of socialization of the individual, education, upbringing, personal and professional development [13].

Analyzing the meaning of the concept of "social maturity of the personality of the future teacher", it should be noted that this is the maturity that appears "for others". As O. Kharchev notes, "the more mature our society becomes, the more the role of the human factor in its functioning grows in it, and therefore the importance of education, which is designed to have the greatest impact on the realization of human potential as a biosocial structure" [14].

Thus, M. Yemelyanova, researching the formation of the professional maturity of a social teacher in the educational process of a university, interprets social maturity as a substructure of professional maturity as follows: "social maturity in the structure of professional maturity is an integrative quality of an individual that integrates social knowledge, social experience and social responsibility, providing individuals successful socialization and harmonization with the environment" [15].

Investigating the social maturity of students of the Pedagogical institution of higher education O. Kameneva defines social maturity as an integrative quality of the individual, which is characterized by the presence of social responsibility, social activity, tolerance, reflection, creativity and the inclusion of public interests in the content of one's own value orientations [16]. At the same time, the scientist emphasizes that "the development of an individual's social maturity takes place over a long period of time and presupposes the presence of an individual's age-related predisposition to this process, and the chronological boundaries that separate social immaturity from social maturity are mobile and individual for each individual" [16].

The results of O. Soldatchenko's scientific research deserve special attention. The pedagogical concept of the formation of social maturity of higher education students developed by the scientist is built on the basis of a social order for the formation of socially mature specialists, the main characteristics of which are social responsibility, the ability to carry out social interaction based on partnership relations, the presence of a system of universal humanistic values and a formed civil position, the ability to act in non-standard situations, initiative, etc. [17].

Understanding the formation of social maturity of students of higher education institutions as a self-organizing system allows to determine two complementary patterns that determine the effectiveness of this process. The first regularity reveals the connection between the method of management and the effectiveness of the process of developing social maturity of higher education students and is formulated as follows: the effectiveness of the process of developing social maturity of higher education students decreases if this process is tightly controlled externally. The second regularity complements the first and is explained as follows: the effectiveness of the process of

developing the social maturity of higher education students increases if the transition from external management to self-management is carried out through this process [17].

V. Maksimova singles out social maturity as an integration criterion that reflects the quality of education, the results of training, upbringing and development [18]. Education in this context is associated with students' achievement of general cultural, pre-professional competence; the ability to solve tasks of a diverse nature (cognitive, value-oriented, communicative), relying on the acquired social experience [18].

By social maturity, S. Vershlovsky understands a person's focus on behavior in society, which involves the ability to make independent and responsible decisions, determine one's own life path, and strive for self-development and self-improvement. According to this approach, the main components of social maturity are called: developed cognitive experiences, critical thinking, readiness for cooperation, tolerance, responsibility, self-respect, which are detailed in independent cognitive activity, conscious choice of profession, way of personal life, organization of one's leisure time, preservation of health [19].

T. Khmurynska shows significant scientific activity in the study of the phenomenon of "social maturity" at the current stage. Thus, considering the essential characteristics of the socio-professional maturity of future social pedagogues in higher educational institutions, the researcher [20] notes that the maturity of a person is largely manifested in the culture of personal aspiration, is determined by the degree of responsible attitude towards the set goal, the nature and quality of planning for its achievement. Therefore, social maturity includes a complex range of intellectual qualities and social feelings: an objective vision of the world; historical (life) optimism; hard work; high professionalism [20].

According to T. Khmurynska, in the pedagogical sense, the content of social maturity reproduces only what is actually formed in a person in the form of personality qualities, as well as what is transformed from the outside into the internal structure of new formations of the personality directly "participates", is realized in his/her transformative activity, aimed at improving activities and relationships that shape the personality and other people. Therefore, in the opinion of the scientist, in the pedagogical analysis it is appropriate to proceed from the fact that not only the activity forms the social qualities of the pupil, but also the accumulated personal potential is realized for the improvement of this activity and social relations. "Such a bilateral relationship can be a sign of the social maturity of an individual", writes T. Khmurynska [21].

Also, T. Khmurynska notes that the process of forming social maturity does not include in its structure the final stage, the stage of unconditional social maturity. After all, as soon as a person stops working on himself/herself, improving himself/herself, developing as a person, social maturity loses its relevance. After all, its essence lies in the desire for self-development, the search for new forms, methods, and tools for improving professional activity, and the manifestation of a creative approach when solving complex tasks. A feature of the formation of social maturity is the continuity and systematicity of this process. "Social maturity is formed throughout a person's life. The systematicity of this process can be seen in ensuring the formation of social maturity in activity, in particular implementing the logic of continuity", writes the scientist [21].

By exploring various approaches to definition of the essence of the concept of "social maturity" in pedagogical research, M. Shkolna established what, despite conflicting views on this issue, all researchers agree that this is a desirable social personality type that is closely related to development society and includes knowledge about society, respect for society's values, compliance with social norms; formed complex of basic social personality qualities [22].

Like any complex, integral phenomenon, social maturity consists of separate components. As such, there are certain states and personalities that accompany her activity in various spheres of society life.

Investigating the development of the social maturity of the future teacher in the conditions of updating the information culture of society, Y. Galeta comes to the conclusion that in pedagogical studies the social maturity of the individual is investigated in the context of the theory of socialization, since one of the priority tasks facing the education system today is to ensure the effectiveness of the flow process of socialization, and social maturity is considered as the result of this process [23].

Y. Galeta exploring a variety of approaches to defining the essence of the concept of "social maturity", the difference of views in the understanding of personality and its maturity explains the absence of a single theory capable of fully describing the development and formation of social maturity.

In the course of the scientific search, the researcher discovered that the meaning of the concept of "social maturity of the individual" in various sciences is revealed as a stage; moment of progress; system status; the position of the individual in society; a person's acquisition of an independent social position; realization of the need for self-improvement; result of socialization; readiness for social self-realization; personal self-determination; multidimensional human condition, acmeform; integration characteristics of the individual; a complex of personal qualities; age and socio-pedagogical characteristics of a person; integration criterion of the results of education, upbringing, development; the result of human development. A mature person should be responsible and active in carrying out activities, his/her actions correspond to the requirements of humanity, relations with himself/herself and other people should be harmonious. In general, such a personality is characterized by freedom of choice and independence, as well as possession of the integrity of characteristics and worldview [23].

The author shows that in the context of the author's conceptual approach, the "social maturity of the individual" is understood as the process and result of the impact on the individual of a set of social relations, which lead to the formation of the basic properties of the individual, which fundamentally adequately reflect the essence of modern society. The presence of such a mechanism allows the functioning of the feedback system of the individual and society, which is determined, in turn, by the level of development of social relations [23].

According to the statement Y. Galeta, "a feature of the formation of social maturity is the continuity and systematicity of this process. Social maturity is formed throughout a person's life. The systematicity of this process is seen in ensuring the formation of social maturity in activities, in particular, implementing the logic of continuity with methodological approaches regarding the formation of social maturity of students of higher education institutions, in addition to synergistic,

there are socio-interactive and socio-educational approaches" [23].

Y. Galeta draws attention to the fact that the social maturity of a future teacher characterizes his development, which is determined by the level and features of interaction with the social environment, other people, a high level of integrity and stability of the individual, his readiness for personal and professional self-determination, labor activity, the identification of an active social position) [23].

The researcher rightly points out that the social maturity of an individual in the conditions of updating the information culture of society consists in mastering the technologies of interpersonal communication, social navigation and rules of behavior in computer networks, as well as social norms, values and role requirements that exist both in specific virtual network communities, as well as in the social community of the information space as a whole.

According to the scientist, the specificity of the process of developing the social maturity of students of a pedagogical university lies in its sequence and the possibility of including students in various types of activities. In this regard, the researcher suggests implementing stages in the formation of social maturity of an individual:

– motivational stage (at this stage, students are formed to focus on the motivation of socially valuable activities);

– social action stage (ensures the acquisition by students of a set of skills to carry out socially valuable activities based on their own accumulated experience);

– social-creative stage (the task of this stage is to create conditions for independent implementation, search and development of skills for organizing socially valuable activities. The most important function of this stage is to expand the boundaries of social interaction and provide a wide range of opportunities for social interaction at different levels – from intragroup and intergroup to interaction with social structures (social services of the city, institutions of additional education, youth associations and the like) [23].

An analysis of the works of many scientists proves that each of them singles out their own criteria for personality maturity.

So, O. Ganzha distinguishes and justifies criteria for the development of the level of social and professional maturity of student youth:

– self-determination (the desire to acquire a profession; the desire to achieve success in life; the identification of mutual understanding and adequate behavior in relation to the environment; using the opportunities of the environment to realize one's aspirations; taking into account the opinions of others);

– activity (desire for self-realization; to be useful to others; to be a leader; to have an active position in life);

– responsibility (having a sufficient level of professional training; demonstrating responsibility for assigned duties; taking into account the opinions of others; being responsible for oneself and others) [24].

The scientist emphasizes that "in order to obtain a holistic assessment, it is necessary to analyze them in unity, since the relationships between them serve as a sign of the holistic formation

of the socio-professional maturity of an individual" [24].

In the process of constructive analysis and based on the obtained results of research and experimental work, the scientist comes to a balanced conclusion that social activity and social responsibility of students in the conditions of a higher education institution of pedagogical direction are formed by means of creative problem solving with the help of the content of social self-determination [24].

Scientists, based on the methodological basis of their own research, identify different criteria of maturity. Quite common are those oriented either to adaptation to the society (socially oriented) or to the discovery of the resources of an autonomous personality, individuality (individually oriented).

Considering socially oriented indicators of maturity, it is necessary to distinguish two spheres of the relationship of personality: with close environment – "I-Others" and with society – "I-Society".

Researchers in the I-Others field identify the following characteristics of a mature personality: the need to care for other people; the ability to be psychologically close to another person. Thus, V. Petrovskyi connects the maturity of a person with personalization, namely, the one's being lying in other people.

The works of V. Orlova [25], V. Slobodchikova [26] are devoted to the criteria of personality maturity in the sphere of "I-Society" [26]. They distinguish values orientation, social and moral norms, beliefs and attitudes.

G. Yavorska [27] work highlighted such criteria requirements maturity personality:

– objectivity examination (signs recognized criteria should actually manifest in this process or phenomena);

– representativeness (the qualities of a person, endowed with the traits of the criterion, must be stable and sufficient for describing and evaluating representatives of the chosen type or community);

– the use of interpretation (representation of general sociological categories by empirical indicators and indicators) [27].

The author also outlines the requirements, which at the same time are the principles of organization of the system of criteria of social maturity: systematicity (a characteristic of the social maturity of an individual in the unity of all its structural elements) and the unity of objective and subjective criteria with the determining function of the former (unity of actions, real behavior of the individual as criterion of maturity and indicators of a person's internal subjective world, the state of his knowledge, beliefs, needs, which are regulators of his actions) [27].

I. Kon pointed out the contradictions in the allocation of criteria for assessing social maturity. He writes that, "trying to formulate a single criterion of social maturity, some authors choose the beginning of an independent working life as such a criterion. Taking this criterion as a basis, we would first of all find a huge pitfall uniformity in the rates of social maturation of different groups of youth: rural youth mature earlier, then workers, and later – youth, students" [28]. I. Kon does conclusion that necessary considers social maturation as multidimensional process that has not one, but several criteria. To the most important and he is one of them refers to: "completion education, acquisition stable profession, the beginning of work activity, material independence from parents,

political and civil coming of age, serving in the army (for men), marriage, birth the first child. Transition from childhood to adulthood characterized by increase quantity and expansion range actually available or legally binding for an individual given age social roles that related to expansion spheres him life activities. In process development substantially is changing subjective significance and correlation different roles and related relations" [28].

In the context of the idea of the development of social maturity of the individual, we are interested in individually oriented indicators in the system of "attitude towards oneself". These include: the ability to effectively use one's own knowledge and abilities [29], the ability to constructively solve different life problems on the way to completeness of self-realization [30].

N. Leonov believes that the study of personality maturity by socially and individually oriented criteria is isolated and even unproductive in their relationship. He believes that their integration gives rise to qualitatively new subjective integration formations that ensure the integrity of the individual's maturity and organize one in a particular way [31]. Therefore, in order to study the maturity of the individual, it is necessary to analyze the process of one's development, formation, researching as criteria indicators of subjectivity, which are born in the process of integration of social and individual components of social maturity.

In particular, the Ukrainian scientist V. Radul came to this conclusion. He states that one of the main conclusions that exist in most scientific studies concerning the notion of "social maturity" is the conclusion that the individual acts as a subject of human activity aimed at transforming the surrounding reality [32].

Our analysis has shown that the content of the definition of "personality's social maturity" in various sciences is revealed as a stage; moment of progress; system status; the position of the individual in society; obtaining a person's social status; realization of the need for self-improvement; the result of socialization; readiness for social self-realization; personal self-determination; multidimensional human condition, acmeform; integration characteristic of the individual; complex of personal qualities; age and socio-pedagogical characteristics of a person; integration criterion of results of training, education, development; the result of human development.

It should be noted that a mature person should have responsibility and activity in carrying out actions, one's deeds are in accordance with the requirements of humanity, relations with oneself and other people should be harmonious. In general, such a personality is characterized by freedom of choice and independence, as well as by possessing the integrity of characteristics and world outlook.

Responsibility is one of the characteristics that ensure their adequate fulfillment, as the basis of the formation of this quality is the mechanism of interiorization, the incorporation of external demands of society into the internal structure of motivation and is a criterion characteristic of the social maturity of the future teacher.

The next criterion directly related to the responsibility of the individual is the social orientation of person's behavior, in general, and of the future teacher in particular. The criterion based on the tasks and beliefs of the authors under our consideration regarding the maturity of a person is the active participation of a person in the life of society (activity). Activity should be considered in a

complex with the concept of responsibility. The socially mature pedagogue should be able to be responsible for the results of one's actions and the choice made.

Another maturity criterion we offer is the ability to interact. The relationship between the criterion of ability to interact and the criterion of personality self-dependence (the fifth criterion) can be traced through the notion of psychological space. A healthy measure of independence from the environment and the sovereignty of a person's psychological space lies in the ability to uphold the sovereignty of values.

In the conditions of informatization of education, the general set of professionally important qualities necessary for the success of professional activity is supplemented by the specific qualities that characterize the level of information culture of the teacher. This logic allows to consider as a separate criterion of future teacher's social maturity the ability for information self-development.

In choosing the conditions of development of the phenomenon under study, we have preferred such measures that do not require a significant complication of the pedagogical process. We believe that pedagogical conditions should be determined by the available possibilities of the pedagogical process, which can accelerate and improve the result.

According to L. Vygotsky, "development is continuous process self-propelled, that characterized by above all permanent emergence the formation of a new one that was not there in the previous ones stages" [33]. That is, acquired quality is more adapted, more perfect. Self-development is the development of someone or something on their own, without influence, without the assistance of any external forces. Self-development is mental or physical development the person it reaches independent classes, exercises [33].

Self-development is the subject's self-change in the direction of his/her ideal self, which arises under the influence of external and internal factors.

The concept of "self-development" is in the interdisciplinary context of such sciences as pedagogy, philosophy, sociology, psychology. In the encyclopedic literature, various interpretations of the concept of self-development are offered. On the one hand, it is interpreted as mental or physical development the person it reaches independent classes, exercises, or someone's development by one's own forces, without the influence or assistance of any external forces, on the other hand, self-development is defined as self-movement, which is characterized by a transition to a higher level of organization [34].

Psychology reveals facts, mechanisms and laws mental activity, and that is why in psychology the term "self-development" rightfully occupies a central place, because the specificity of self-education as a factor of personality development is that, among all other factors, it relies to the greatest extent on the individual physiological and psychological characteristics of a person, his/her inclinations and needs and is an interesting subject for research and study by psychologists. Thanks to this, a person manages to identify dominant qualities for himself/herself, which in the future can significantly determine his/her entire life path, ensure the development of physical, intellectual and moral qualities. The results of the experiments of modern psychologists confirm that a personality becomes harmonious not due to the "proportional" and "even" development of all its qualities, but as

a result of the maximum development of those abilities that dominate its structure and determine the meaning of its life and activity [35].

In the formation of a personality, its various orientations seem to compete with each other, until the one of them appears, which will unite all the others around it, penetrating into each of them. That's it dominance is not the displacement of other human qualities, but the transformation of one of them into a leader. This is a special variant of "coordinating individual aspirations by uniting around the strongest of them" [36].

V. Andreev [37] formulated the law of creative self-development of the individual as a person of culture. The essence of this law is that education turns into self-education, learning into self-learning, socialization into self-realization, provided that a person actively masters philosophical, psychological, and pedagogical culture, that is, becomes a philosopher, a psychologist, and a teacher for himself/herself.

Thus, O. Glavatska [38] states that: "Self-development is carried out both in spontaneous, unconscious forms (imitation, play, adaptation, etc.), when the individual does not set a goal to change himself through his own efforts, and in conscious, consciously determined, purposefully used to achieve a mental boundary, an ideal (self-education, self -creation, self-improvement). Conscious forms of personal self-development have an activity-providing and spiritual-valuable nature" [38].

S. Kuzikova [39] offers the following definition of the process of self-development "...as a varying degree of conscious, self-controlled and self-directed activity of an individual – self-development as a psychological and personal change" [39]. The author emphasizes that such a multifaceted understanding of the essence of the researched process allows to fill it more meaningfully, to adapt it for better understanding, and we agree with this vision.

In the process of self-development in an individual, conscious mechanisms for managing this process are already included, because it is carried out in accordance with the ideas and goals of the individual himself/herself. The basis of self-development is a person's need for new achievements, the desire for success, for improvement, an active life position, positive thinking, faith in one's abilities, understanding the meaning of life, and this is nothing but conscious motivation.

As we can see, this definition of self-development emphasizes the role of homeostasis, a means of maintaining the immutability of the individual's Self, his psychological health in a changing world (in this case, self-development can be spoken of as an adaptation strategy, emphasizing its functions of self-regulation and self-organization). This view is reflected in the congruent approach to understanding the process of self-development, the main idea of which is that its function is the harmonization of a person's relationship with himself/herself and the surrounding world (K. Vazina, M. Mamardashvili, K. Obukhovsky, O. Suvorov). And in this definition, self-development is presented as a conscious and controlled activity of the individual.

The opinion of R. Faizullin is important [40], who believes that self-education and self-development can be represented as a continuous expansion of the scope and content of self-awareness, that is, the inclusion of an ever-increasing number of human life functions, habits and mental states into the sphere of consciousness [41].

Self-development as mastering the opportunities that life offers to a person is considered by D. Leontiev [42], H. Ortega-i-Gasset [43] and others. According to H. Ortega-i-Gasset "to live is means be in circles certain possibilities..." [43].

As we can see, attention to the process of self-development is due to its defining role in the life of an individual, the active inclusion of a person in the process of his/her own life creation. This position is stable in Ukrainian psychological science (H. Ball [41], H. Kostiuk [44], etc.). However, there is a terminological discrepancy and difference in the interpretation of the psychological essence of self-development by various scientists.

Self-development is closely related to self-realization, but has a slightly different motivational basis: to develop, to enrich one's essential powers for better self-realization in the future. Here, human activity is aimed at itself.

In the context of dialogical, inherently humanistic communication, students receive experience of using constructive forms of interaction, responsibility for the effectiveness of such a form of activity [45].

Taking into account various factors, dialogue in the classroom can be constructed as:

– dialogue-imitation: oriented on a question-and-answer form, where the role of the leader is assigned to the teacher;

– dialogue-discussion: involves communication of conditionally "equal" subjects in the educational process;

– dialog-cognition: which encompasses the complex interconnections and cognitive relationships of the subject with the world, with others, with oneself.

In the course of the research, the conditions for dialogue realization have been identified. One of them has been the reflexive management of its performance, when the teacher not only sets the goals of students' mastering an educational standard, but seeks to ensure that these goals are internally accepted.

Technology of creating a dialogue has the following steps:

– selection a value component in the professional problem (facts, ideas, life problems);

– transformation of deductive-descriptive statements into questions-answers, problematic ones;

– building a logical system of questions;

– thinking through evaluation questions in order to develop in students a value attitude to a professional problem.

Research and experimental work on vocational training of students on the basis of dialogic interaction has been carried out in the system of all cycles of disciplines of establishments of higher education, including pedagogical practice.

Productive technology in the development of social maturity of students – future teachers, the technology of workshops has been implemented within the framework of the first pedagogical condition.

The basic ideas of this technology correspond to the essence of the principles of dialogization and personalization of education:

– everyone are able to do it;

– the knowledge of one person must be enriched with the knowledge of others, a constant dialogue with the author, pedagogue, friends, oneself is needed;

– learning takes place in an atmosphere of openness and complete equality of participants, where everyone has the right to make a mistake, where ignorance and failure are respected.

The conditions that contribute to the increasing efficiency of independent work have been defined: the presence of the necessary training and methodological support, the existence of a system for monitoring the quality of independent work; the presence of a mobile feedback system (for example, the presence of a test system); computer support.

The organization of independent work in the information environment is associated with identifying the stages of the process of this work.

The first stage is awareness of the need to find information, to identify search goals. The second stage is the information search. The third is the processing of information, the choice of storage method. The fourth is the transfer of information into knowledge (application in practice).

We have outlined the main stages of creation and integration of information and learning environment resources in the traditional educational process:

1. The initial or "innovation" stage is usually characterized by the fact that the profile of the traditional course does not change.

2. The second stage is defined as the stage of "pedagogical modernization" – change of course profile.

During the research, a project has been designed to create an information and educational environment – a dynamic system, which is a holistic set of educational situations that are gradually substituting one another. Educational situation means a system of psychological and pedagogical and didactic conditions and incentives that put a person before the need for conscious choice, adjustment and implementation of their own model of learning, i.e. the implementation of independent learning activities.

The information and educational environment implements the following functions:

– prompt delivery of educational information to the learner;

– interaction between all participants of the educational process and feedback from the lecturer;

– providing individual and group independent work.

In order to stimulate the use of knowledge and skills acquired during the course, professionally oriented motivational-stimulating situations have been used, providing for certain steps and sequence of implementation, namely:

– conducting a common orientation in the personally meaningful subject area for students;

– identification of problems of interest to students as future teachers;

– consideration of problems in the context of students' professional and personal values.

An effective version of the organization of students' club work – "virtual laboratory", has been developed and tested.

Our experience of pedagogical practice is based on the use of so-called enhancing technologies that provide "significant benefits" without being fundamentally new to technologies and approaches.

It is has been proved that one of the innovative approaches to the organization of pedagogical practice is the scientific-practical conference that precedes it. Unlike a traditional conference, it involves several steps. The first stage is demonstrative lessons of school teachers. In the second stage, in the round table mode, there is a joint reflection of teachers, students and lecturers of the establishment of higher education. The third stage – "student reading": future teachers offer for collective discussion their own research work on pedagogy and psychology, teaching methods (the topics of the reports correlate with the content of demonstrative lessons). The final stage is conferences, the final reflection of all subjects of the educational process, in the context of which students receive recommendations for future practice.

We also consider portfolio as an innovation in teaching practice.

The experience of organizing pedagogical practice of students, which involves its support through a specialized faculty website containing information on pedagogical practice, has been implemented.

Technology of pedagogical support of future teacher's professional training within pedagogical practice framework includes the following stages:

1) the target – the stage of self-knowledge of educational needs;

2) the motivational – the stage of programming changes in one's personality;

3) the procedural – the stage of implementation and demonstration of own presentation;

4) reflection – the stage of opening a resource of new opportunities.

It has been found that one of the effective methods of extending social experience and developing social maturity is social practice. We have implemented the following types of social practice: charity activities; volunteer activities. Opportunities of the project method have been introduced. The method of projects implemented in the educational process, determines the formation of social characteristics, promotes the development of social maturity of the student, one's willingness to adapt in society, professional activity.

An important factor in the activation and development of student research work is the effective organization of individual student research work. The individual approach allows the implementation of the statements:

– involvement of students in research work from the very 1st year and continuous observation of their professional and scientific growth throughout their period of studying in higher education;

– availability of a permanent research topic during the last 2–2.5 years of study;

– relevance of the subject of research work of students with the profile of specialists training;

– practical orientation of research work, possibility of realization of scientific developments in practice;

– merging of student work topics with complex topics being developed by the departments, possibility of publishing student scientific works;

– presence of a competent specialist as a scientific supervisor;

– introduction of "research training", when a skillful student works from the very beginning of the study not on the diploma, but on the dissertation (thesis) research;

– an individual education program aimed at identifying talented students and stimulating their scientific research activities.

Essential for activating students' scientific research work is holding competitive organizational and public events, competitions for the best group, department, faculty in organizing students' research work within the framework of establishment of higher education.

The results of the evaluation by the experts of the level of development of social maturity of the future teacher we have displayed according to the criterion "ability of informational self-development" (**Table 3.1**).

Table 3.1 The level of development of social maturity of future teachers according to the criterion of "ability of informational self-development" in the expert group

No.	Indices	Experts									Total
		1	2	3	4	5	6	7	8	9	
1	The need for constant updating of knowledge	7	6	7	6	6	7	6	6	7	58
2	Professional mobility and adaptability in the informational society	6	6	6	7	6	7	6	6	7	57
3	Responsibility when working with technical means	7	7	8	7	8	8	8	7	8	68
4	Relationship to information, objects and phenomena in the informational environment	4	5	4	5	2	4	4	4	4	36
5	Critical attitude to information consumption	4	4	5	4	2	5	5	5	5	39
6	Self-esteem and reflection at the level of information contacts	4	5	5	5	4	5	5	5	5	43
	Total	**32**	**33**	**35**	**34**	**28**	**36**	**34**	**33**	**36**	**301**

Since the expert study has been conducted by the method of direct evaluation, we will normalize them.

The results of the normalizing are shown in **Table 3.2**.

Table 3.2 Normalized estimates for EG

Indices	Experts									Total
	1	2	3	4	5	6	7	8	9	
1	0.22	0.18	0.20	0.18	0.21	0.19	0.18	0.18	0.19	1.7385
2	0.19	0.18	0.17	0.21	0.21	0.19	0.18	0.18	0.19	1.7081
3	0.22	0.21	0.23	0.21	0.29	0.22	0.24	0.21	0.22	2.0429
4	0.13	0.15	0.11	0.15	0.07	0.11	0.12	0.12	0.11	1.0704
5	0.13	0.12	0.14	0.12	0.07	0.14	0.15	0.15	0.14	1.1545
6	0.13	0.15	0.14	0.15	0.14	0.14	0.15	0.15	0.14	1.2856
Total	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**9**

Let's calculate the group estimates and the coefficients of competence of each expert. To do this, we will use the above algorithm for calculating group estimates and the coefficients of experts' competence (accuracy of calculation $\varepsilon=0.01$).

Average object estimates $x_i^1 = \sum_{j=1}^{9} x_{ij} k^0$ the first approximation by the coefficient of competence $k^0 = k_j^0 = \frac{1}{m}(m=9)$ is equal to:

$x_1^1 = 0.193,\ x_3^1 = 0.227,\ x_5^1 = 0.128,$

$x_2^1 = 0.190,\ x_4^1 = 0.119,\ x_6^1 = 0.143.$

The normalization coefficient $\lambda^1 = \sum_{i=1}^{6}\sum_{j=1}^{9} x_i^1 x_{ij} = 1.583.$

The values of the coefficients of competence of the experts of the first approximation (**Table 3.3**) let's calculate by the formula $k_j^1 = \frac{1}{\lambda^1}\sum_{i=1}^{6} x_{ij} x_i^1,$ where $j = \overline{1.9}.$

Table 3.3 Competence coefficients of expert at first approximation

Experts	Competence coefficients
Expert 1	0.111357
Expert 2	0.109296
Expert 3	0.110804
Expert 4	0.109608
Expert 5	0.116872
Expert 6	0.111057
Expert 7	0.110473
Expert 8	0.109475
Expert 9	0.111057

Let's calculate the group estimates of the second approximation. We can find the average object estimates by the formula $x_i^2 = \sum_{j=1}^{9} x_{ij} k^1$:

$x_1^2 = 0.1934,\ x_3^2 = 0.2274,\ x_5^2 = 0.1279,$

$x_2^2 = 0.1899,\ x_4^2 = 0.1186,\ x_6^2 = 0.1428.$

The result of the second step satisfies the condition of completion of the iterative process:

$$\begin{array}{r} \left|x_i^2 - x_i^1\right| \\ \hline 0{,}00020062 \\ 0{,}00015751 \\ 0{,}00041405 \\ 0{,}00037421 \\ 0{,}00035514 \\ 0{,}00004283 \end{array}$$

$max = 0{,}00041405$

Since $\max\left(\left|x_i^2 - x_i^1\right|\right) = 0{,}00041405 < 0{,}01$, then the value of the group estimation is taken to be the average estimates of the second approximation objects, which will allow to determine and place the indices of the content and operational criterion in an ascending order according to the rank (**Table 3.4**).

Table 3.4 Average estimates of objects in the second approximation in EG

Indices	Average estimates
The need for constant updating of knowledge	0.2274
Professional mobility and adaptability in the informational society	0.1934
Responsibility when working with technical means	0.1899
Relationship to information, objects and phenomena in the informational environment	0.1428
Critical attitude to information consumption	0.1279
Self-esteem and reflection at the level of information contacts	0.1186

To check the consistency of expert opinions, we calculate the dispersion coefficient of concordance. To do this, let's rank the expert estimates, calculate the sum of ranks r_i, the deviation of the sum of ranks from their overall average $r_i - \bar{r}$, as well as the deviation square $\left(r_i - \bar{r}\right)^2$. The results are presented in **Table 3.5**.

Let's calculate the coefficient of concordance for $m=9$, $n=6$, $T_j=120$, $S=802.83$:

$$W = \frac{12S}{m^2\left(n^3 - n\right) - m\sum_{j=1}^{m} T_j} = 0.604771.$$

Therefore, the peer review of the above criteria is significant and thorough.

Table 3.5 Calculation of the dispersion coefficient of concordance

Indices	Experts									r_i	$r_i - \bar{r}$	$\left(r_i - \bar{r}\right)^2$
	1	2	3	4	5	6	7	8	9			
1	7	6	7	6	6	7	6	6	7	58	7.8333	61.361
2	6	6	6	7	6	7	6	6	7	57	6.8333	46.694
3	7	7	8	7	8	8	8	7	8	68	17.833	318.03
4	4	5	4	5	2	4	4	4	4	36	-14.17	200.69
5	4	4	5	4	2	5	5	5	5	39	-11.17	124.69
6	4	5	5	5	4	5	5	5	5	43	-7.167	51.361
H_j	2	2	1	2	2	2	2	2	2			
h_1	2	2	0	2	2	2	2	2	2			
h_2	3	2	2	2	2	2	2	2	2			
T_j	30	12	6	12	12	12	12	12	12			

The next step is to describe the results of the estimation by the experts of the level of development of social maturity of future teachers according to the criterion of "ability of informational self-development" in the control group. The results of the experts' work are presented in **Table 3.6**.

Table 3.6 The level of development of social maturity of future teachers according to the criterion of "ability of informational self-development" in the control group

No.	Indices	Experts									Total
		1	2	3	4	5	6	7	8	9	
1	The need for constant updating of knowledge	2	2	3	2	3	3	3	3	3	24
2	Professional mobility and adaptability in the informational society	2	3	3	3	2	3	3	3	3	25
3	Responsibility when working with technical means	5	5	6	5	6	6	6	5	6	50
4	Relationship to information, objects and phenomena in the informational environment	2	3	2	3	3	2	3	2	2	22
5	Critical attitude to information consumption	5	5	4	5	6	5	6	5	6	47
6	Self-esteem and reflection at the level of information contacts	2	3	2	3	3	2	3	2	2	22
	Total	**18**	**21**	**20**	**21**	**23**	**21**	**24**	**20**	**22**	**190**

Expert research has also been carried out by the method of direct evaluation, so the results will be normalized.

The results of the normalizing are shown in **Table 3.7**.

Table 3.7 Normalized estimates for CG

Indices	Experts									Total
	1	2	3	4	5	6	7	8	9	
1	0.11	0.10	0.15	0.10	0.13	0.14	0.13	0.15	0.14	1.14
2	0.11	0.14	0.15	0.14	0.09	0.14	0.13	0.15	0.14	1.188
3	0.28	0.24	0.30	0.24	0.26	0.29	0.25	0.25	0.27	2.3733
4	0.11	0.14	0.10	0.14	0.13	0.10	0.13	0.10	0.09	1.0384
5	0.28	0.24	0.20	0.24	0.26	0.24	0.25	0.25	0.27	2.2257
6	0.11	0.14	0.10	0.14	0.13	0.10	0.13	0.10	0.09	1.0384
Total	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**9**

Let's calculate the group estimates and the coefficients of competence of each expert. For this purpose we will use the algorithm of calculation of group estimates and coefficients of competence of experts (accuracy of calculation $\varepsilon = 0.01$).

Average estimates of first-approximation objects by competence factor $k^0 = \frac{1}{9}$ for CG are equal:

$$x_1^1 = 0.1262, \quad x_3^1 = 0.2637, \quad x_5^1 = 0.2473,$$

$$x_2^1 = 0.132, \quad x_4^1 = 0.1154, \quad x_6^1 = 0.1154.$$

The normalization coefficient $\lambda^1 = 1.7161$. Let's calculate the values of the competence coefficients of the first approximation experts for CG (**Table 3.8**).

Table 3.8 Competence coefficients of experts in the first approximation for CG

Experts	Competence coefficients
1	**2**
Expert 1	0.114373
Expert 2	0.1081
Expert 3	0.110938
Expert 4	0.1081
Expert 5	0.1115

Continuation of Table 3.8

1	2
Expert 6	0.112517
Expert 7	0.110059
Expert 8	0.11046
Expert 9	0.113953

Let's calculate the average group estimates of the second approximation for CG:

$x_1^2 = 0.1264,\quad x_3^2 = 0.264,\quad x_5^2 = 0.2475,$

$x_2^2 = 0.1319,\quad x_4^2 = 0.1151,\quad x_6^2 = 0.1151.$

The result of the second step satisfies the condition of completion of the iterative process:

$$\begin{array}{l} \left|x_i^2 - x_i^1\right| \\ \hline 0{,}00017284 \\ 0{,}00013087 \\ 0{,}00027267 \\ 0{,}00026884 \\ 0{,}00022304 \\ \underline{0{,}00026884} \end{array}$$

$max = 0{,}00027267$

Since $\max\left(\left|x_i^2 - x_i^1\right|\right) = 0{,}00027267 < 0{,}01,$ then, for the value of the group estimation, the average estimates of the second approximation objects are taken, which will allow to determine and place the indices of the criterion for "ability of informational self-development" in an ascending order according to the rank (**Table 3.9**).

Table 3.9 Average estimates of objects in the second approximation in KG

Indices	Average estimates
1	2
The need for constant updating of knowledge	0.2475186
Professional mobility and adaptability in the informational society	0.2475186
Responsibility when working with technical means	0.1318694
Relationship to information, objects and phenomena in the informational environment	0.126422

Continuation of Table 3.9

1	2
Critical attitude to information consumption	0.1151098
Self-esteem and reflection at the level of information contacts	0.1151098

To check the consistency of the opinions of the experts on CG, let's calculate the dispersion coefficient of concordance (**Table 3.10**).

Table 3.10 Calculation of the dispersion coefficient of concordance

Indices	Experts									r_i	$r_i - \bar{r}$	$\left(r_i - \bar{r}\right)^2$
	1	2	3	4	5	6	7	8	9			
1	2	2	3	2	3	3	3	3	3	24	-7.667	58.778
2	2	3	3	3	2	3	3	3	3	25	-6.667	44.444
3	5	5	6	5	6	6	6	5	6	50	18.333	336.11
4	2	3	2	3	3	2	3	2	2	22	-9.667	93.444
5	5	5	4	5	6	5	6	5	6	47	15.333	23511
6	2	3	2	3	3	2	3	2	2	22	-9.667	93.444
H_j	2	2	2	2	2	2	1	2	2			
h_1	2	2	2	2	2	2	0	2	2			
h_2	4	3	2	3	3	2	4	2	2			
T_j	66	30	12	30	30	12	60	12	12			

Let's calculate the coefficient of concordance for $m=9$, $n=6$, $T_j=264$, $S=861.33$:

$$W = \frac{12S}{m^2\left(n^3 - n\right) - m\sum_{j=1}^{m} T_j} = 0.7063.$$

Therefore, the expert evaluation of the CG against the above criterion is significant and thorough.

CONCLUSIONS

The essence of the concept of "social maturity" has been revealed, its genesis and the degree of exploration of the problem at the interdisciplinary level have been characterized.

It has been established that the phenomenon of personality maturity has not acquired a clear conceptual expression at different levels of theoretical research and within them. This is due primarily to the fact that the meaning of the concept of "integrity" is understood on different grounds, based on the specific approach of one or another author. Specificity of philosophical, sociological and psychological-pedagogical approaches to the problem of personality maturity consists, first, of finding out the essence of maturity as a special qualitative state in the development of any system and, second, in revealing the essence and social conditionality of the maturity of the individual as indicator of one's integration into the social whole.

It has been revealed that the content of the concept of "social maturity of personality" in various sciences has been revealed as a stage; moment of progress; system status; the position of the individual in society; obtaining a person's social status; realization of the need for self-improvement; the result of socialization; readiness for social self-realization; personal self-determination; multidimensional human condition, acmeform; integration characteristic of the individual; complex of personal qualities; age and socio-pedagogical characteristics of a person; integration criterion of results of training, education, development; the result of human development. Mature personality must have responsibility and activity in carrying out the activities, one's actions are consistent with the requirements of humanity, relations with themselves and other people should be harmonious. In general, such a personality is characterized by freedom of choice and independence, as well as by possessing the integrity of characteristics and outlook.

The following criteria of development of social maturity of the future teacher in conditions of updating of information culture of a society have been defined and substantiated: responsibility, social orientation, activity, ability to interact, independence, ability to informational self-development.

The pedagogical conditions for the formation of the social maturity of the future teacher were singled out.

The most favorable conditions for shaping the development of social maturity are the following:

1. As a result of planning and goal-setting of their development by comparing socio-professional expectations and achievements in the process of professional formation, taking into account initiative and responsibility.

2. Organization of quasi-professional activities of students on the basis of taking into account the essential characteristics of the phenomenon of activity in the student environment. Quasi-professional activities of students are carried out in parallel with the educational process on a continuous basis and involve constant contact of students, teachers and practitioners.

3. Participation of students of establishments of higher education in social and project activities. Social projects are becoming more widespread in the professional training of professionals involved in the field of work with people (educators, psychologists, managers, state and municipal officials and others).

The results of diagnostics of the level of development of social maturity of the future teacher according to certain criteria give grounds to claim that the substantiated and realized pedagogical conditions are effective. The most effective have been the following conditions: dialogue of

pedagogical interaction between teacher and student; involvement of students in socially useful activities and activation of students' research activities.

The study does not exhaust all the theoretical and practical aspects of the problem. The subject of a separate scientific search may be any of the identified pedagogical conditions. Further scientific exploration requires the development of a methodology for studying the social maturity of the individual and identifying opportunities for virtualization as a new path of personality development.

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CHAPTER 4

CULTIVATING MULTICULTURALISM VIA TEACHING PHRASEOLOGY TO PHILOLOGY STUDENTS

ABSTRACT

This research investigates the efficacy of teaching phraseology in philology education to cultivate multiculturalism among students. Phraseology, the study of fixed expressions and idioms within a language, reveals cultural nuances and societal values embedded in linguistic expressions. Teaching phraseology as a pedagogical strategy is examined, emphasizing its role in enhancing students' intercultural competence and appreciation for linguistic diversity. Through a comparative analysis of phraseological / idiomatic expressions of the Russian, Ukrainian, and English languages, students are prompted to recognize and reflect on shared human experiences and cultural specificities. The findings obtained from surveys and questionnaires evidence that integrating phraseology into philology programs demonstrates positive impacts on students' cultural awareness and linguistic proficiency. Findings suggest that teaching phraseology enriches students' linguistic skills and fosters an inclusive and multicultural learning environment despite existing or pending military aggressions, exemplified via the Russian full-scale invasion to Ukraine. Incorporating phraseology into philological education emerges as a valuable tool for preparing students to navigate the complexities of a globalized world. By offering a deeper understanding of cultural nuances and linguistic diversity, phraseology education promotes cross-cultural communication and appreciation. This research underscores the significance of integrating phraseology into philology curricula to foster multiculturalism and prepare students for diverse linguistic and cultural contexts, to promote inclusivity and understanding in an increasingly interconnected world.

KEYWORDS

Phraseology, philology students, multiculturalism, intercultural competence, Russia-Ukraine war.

In recent years, the role of phraseology in philology education has garnered increasing attention [1–3] as educators seek innovative ways to cultivate multiculturalism among students [4, 5]. Phraseology, the study of fixed expressions and idioms within a language, serves as a rich

repository of cultural nuances and societal values [6, 7]. These days it is seen crucial to integrate phraseology into the curriculum [8, 9], as educators can provide philology students with a deeper understanding of both their own and other cultures, thereby enhancing their intercultural competence and appreciation for linguistic diversity.

As society grapples with rapid changes – technological advancements, social upheavals, and geopolitical tensions – education must evolve to meet the demands of a more interconnected and multicultural world. This research contributes to the growing body of work emphasizing the transformative potential of education, particularly via phraseology as a pedagogical tool for multicultural education, providing philology students with the necessary skills to thrive in an increasingly globalized and complex world.

4.1.1 DEFINING THE RESEARCH PROBLEM

From a social and professional perspective, the interconnectedness of today's global society has amplified the necessity for individuals who are proficient in multiple languages and culturally literate [10]. Traditional language education often emphasizes grammar and vocabulary while neglecting the cultural elements crucial for effective communication [11]. This approach can result in learners who, while grammatically competent, lack the cultural sensitivity needed to fully engage in intercultural dialogue. Phraseology, with its focus on idiomatic expressions, provides a valuable means to bridge this gap by highlighting the cultural contexts embedded within language [12]. Further, recent research underscores the positive impacts of incorporating phraseology into language education. Studies have shown that students exposed to phraseological content develop a more nuanced understanding of cultural references and idiomatic usage, essential components of linguistic fluency [13, 14]. For example, D. Kuzmanovska et al. [15] report that based on their research with 3rd and 4th year students who were encouraged to raise the level of linguistic competence while studying with a greater number of phraseological units, universities integrating phraseology into their philology programs observe enhanced student engagement and improved linguistic proficiency. Furthermore, G. Zokirova [16] found that students who engaged with phraseological materials exhibited significant improvements in both their linguistic and cultural competencies.

Despite these advancements, several challenges remain. One of the issues throughout continuous years has been the lack of standardized pedagogical approaches for teaching phraseology [17, 18]; another specifies a need for more comprehensive resources and materials that can effectively convey the cultural nuances of idiomatic expressions [19]. The other concerns are that educators must also be trained to teach phraseology in a way that emphasizes cultural sensitivity [20] and intercultural competence, which significance grows its relevance under circumstances of military aggression, military conflicts and wars, accounting for the role of mass media and propaganda [21, 22]. Moreover, understanding how teaching phraseology may cultivate multiculturalism among philology students and support them at moments of stress and abandoned hope is seen as key-centric for this research.

Finally, following the research findings it is also important to highlight the necessity for longitudinal studies to measure the long-term effects of phraseological instruction on cultural competence [23], considering the intersocial values and recognized benefits of such educational practices [24].

4.1.2 IMPLICATIONS FOR PHRASEOLOGY IN PEACEBUILDING AND EDUCATION

It is strongly believed that these studies can provide valuable insights into how deep and sustained engagement with phraseology fosters mutual understanding and respect among learners from different cultural backgrounds.

At the present stage of developments in the world and the current trends in transforming education, promoting Ukrainian phraseology can serve as a powerful tool in mitigating hatred and fostering reconciliation among people from countries in conflict and/or at war, e.g., Ukraine and the Russian Federation. When one country commits acts of aggression and genocide against another, as in the current war, the intentional dissemination and study of the victimized country's cultural and linguistic heritage can humanize its people and highlight their shared humanity. By understanding and appreciating the rich cultural tapestry embedded in Ukrainian phraseology, learners around the world can develop empathy and a nuanced perspective that counters divisive narratives.

From this perspective, educational initiatives that emphasize phraseological instruction can also play a pivotal role in peacebuilding. They offer a platform for highlighting the commonalities and shared values (polyculturalism) that transcend political and national boundaries for Ukraine and the EU, as well as the rest of the democratic world, on the one hand; on the other, they may offer insights into the historical and linguistic differentiators (multiculturalism) that may help understand committed acts of terror and aggression, need for torture and superiority by that "other", which does not necessarily imply that these approaches may be accepted, shared, and integrated / assimilated into languages and cultures.

By examining the phraseology used within the aggressor's language, Russian as part of this study, educators and researchers can uncover underlying cultural attitudes and historical contexts that contribute to aggressive behaviors and ideologies.

This dual approach not only promotes cultural empathy and understanding but also provides a critical lens for analyzing and addressing the root causes of conflict and aggression, ultimately contributing to a more peaceful and informed global community.

4.1.3 BROADER IMPLICATIONS AND FUTURE DIRECTIONS

It is well known that through the lens of phraseology, students and educators can explore multiple themes. It is suggested that extending this thematic list may greatly contribute to better understanding of resilience, survival, and cultural pride, fostering a deeper connection to human experience beyond the confines of nationalistic and antagonistic rhetoric.

Next, the recent study by V. Svyrydiuk et al. [25] outlines strategies and tools for cultivating educational-strategic competence among pre-service teachers, emphasizing the importance of digital literacy and pedagogical innovation in teacher training. This framework can be extended by integrating the lens of phraseology as a tool for enriching the educational experience, particularly in fostering a deeper understanding of resilience, survival, and cultural pride.

Phraseological studies provide a unique way to uncover the linguistic and cultural layers embedded within everyday expressions, many of which reflect collective memory, historical struggles, and social cohesion. By incorporating phraseology into teacher education, educators can create a bridge between digital tools and traditional linguistic wisdom. This fusion will enhance the digital literacy discussed by V. Svyrydiuk et al. and broadens the scope of cultural and emotional literacy, helping educators to recognize the resilience inherent in language and culture.

Moreover, the exploration of phraseological units that encapsulate themes of survival and cultural pride can be a vital part of developing educational-strategic competence. These units often carry within them a history of endurance, adaptation, and transformation, offering students and educators alike the opportunity to reflect on human experience beyond a narrow, nationalistic perspective. By fostering an appreciation for these cultural expressions, educators can instill a sense of interconnectedness and solidarity, crucial elements in nurturing global citizenship. Thus, aligning the concept of educational-strategic competence with the study of phraseology enhances the potential for developing well-rounded, culturally aware, and resilient future educators.

Ultimately, integrating Ukrainian phraseology into global educational curricula not only preserves a vital aspect of Ukrainian heritage but also promotes a more compassionate and interconnected world. This approach will help build bridges of understanding and reduce the seeds of hatred that wars and genocides seek to sow. By valuing and sharing Ukraine's linguistic and cultural expressions, the international community can stand in solidarity against cultural erasure and support the enduring fight for justice and peace.

Therefore, this research aimed to address these gaps by teaching phraseology to philology students exploring it as an effective pedagogical strategy for cultivating multiculturalism. By examining the impact of the obtained results on students' cultural awareness and linguistic skills, the study sought to demonstrate the value of phraseology in fostering multiculturalism as compared to polyculturalism and means of lessening negative perceptions that have unexpectedly been brought to the frontline of students' attitudes with the Russia-Ukraine war. In the end, the findings will also highlight the importance of linguistic diversity in promoting inclusivity and understanding in an increasingly interconnected world at a bigger international level.

4.2 EDUCATIONAL FRAMEWORK AND IMPLEMENTATION

As the study aimed to cultivate multiculturalism through teaching phraseology to bachelor and master students at the *National University of Life and Environmental Sciences of*

Ukraine (Kyiv, Ukraine), or NULES, *Kryvyi Rih State Pedagogical University* (Kryvyi Rih, Ukraine), or KRPU, and *Drohobych State Pedagogical University after Ivan Franko* (Drohobych, Ukraine), or DSPU, the methodology of the research was designed to systematically investigate the impact of such teaching phraseology as an effective means to cultivate multiculturalism among students at the specified universities. The research employed a mixed-methods approach, combining quantitative and qualitative data collection and analysis to provide a comprehensive understanding of the effects of phraseological instruction for purposes of multicultural education.

4.2.1 PARTICIPANTS AND TIMELINE

The study involved a total of 316 participants, from which 252 participants were bachelor students (121 from NULES, 88 from KRPU and 43 from DSPU) and 64 master students (32 from NULES, 17 from KRPU and 15 from DSPU).

In terms of demographics, participants included both male and female students, with a breakdown of 68 % for female students and 32 % for male students, correspondingly, aged 18 to 22, from various parts of Ukraine, with a majority from eastern, western, and central regions. No participant was known from the southern part of Ukraine.

The study was conducted over three semesters, i.e., spring semester 2023 (***Stages 1*** and ***2***), winter semester 2024 (research work and projects), and spring semester 2024 (***Stage 4***). The study included 4 stages as described below.

4.2.2 STAGES OF THE STUDY

Stage 1. *Initial survey and questionnaire*. The objective was to assess students' baseline understanding of poly- and multiculturalism, and to gauge their levels of tolerance towards Russians as a nation, the Russian language, Russian culture, and their desire to communicate in Russian, in the light of the full-scale invasion of the Russian Federation into sovereign Ukraine and continuing Russia-Ukraine war.

This initial assessment was crucial to establish the baseline understanding and tolerance levels, considering that most Ukrainians are bilingual, speaking both Ukrainian and Russian.

Methods employed surveys and questionnaires as administered to all participants who expressed their consent to participate in the survey. These instruments included a mix of Likert-scale items to quantify attitudes, and open-ended questions to capture detailed perspectives. As regards the content, questions focused on students' knowledge and perceptions of poly- *vs.* multiculturalism, and their attitudes towards Russian cultural elements and language.

Stage 2. *Teaching phraseology as part of academic in-class and out-of-class activities*. The objective was to research, identify, analyze learning and teaching journeys in individual, pair, and group

work, together – lecturers and students, or individually, for phraseological (idiomatic) expressions in the Russian, Ukrainian, and English languages with a focus on linguistic and cultural codes, linguistic and cognitive worldviews, and representations, as well as intersocial and democratic values.

This stage emphasized intersocial and democratic values embedded in phraseological / idiomatic expressions of the three contrasted languages, with a distinct borderline between contemporary Russian idioms and those in the Ukrainian and English languages. The curriculum included comparative analysis of idiomatic expressions in Ukrainian and English, highlighting the cultural and cognitive dimensions of language. It was observed that even with the core in the lexical and semantic field of so called negatively colored lexeme, including the periphery of the field, the meaning entails empathy and forgiveness.

Methods included the curriculum design referred to certain developed courses, i.e., Comparative Typology of English and Ukrainian Languages, Comparative Lexicology of English and Ukrainian Languages, Ukrainian Language and Literature, Practical Course of L1 (English as a Foreign Language), and Ethnolinguistics, with the amended sections that contained comparative analysis of contemporary Russian idiomatic / phraseological expressions. The basis of the study material rested on the dictionaries of contemporary Russian phraseological expressions:

1) *Contemporary* (*lit*. New) *Russian Phraseology* by V. Mokienko [26];

2) *Phraseological Dictionary of the Modern Russian Literary Language*, edited by A. Tikhonov [27];

3) *Dictionary of Modern Russian Phraseological Units* by A, Zhukov and M. Zhukova [28];

4) traditional phraseological / idiomatic expressions of the English and Ukrainian languages, i.e., *English-Ukrainian Phraseological Dictionary*, edited by K. Barantsev [29].

The instructional activities included lectures, discussions, reflections, and practical exercises on comparing idiomatic expressions in Ukrainian and English, and contrasting these with idiomatic expressions in Contemporary Russian, emphasizing their cultural and cognitive implications.

Stage 3. *Semester projects and essays*. The objective was to engage students in practical application and analysis of phraseological / idiomatic expressions in relation to cultural and behavioral patterns, particularly focusing on the Russia-Ukraine conflict, that will lead to their deeper reflection and raise awareness as to the current developments locally and internationally under the circumstance of Russia-Ukraine war; to see the EU and world's respect to democratic and humane values as well as balanced and seasoned approach to support Ukraine and its people rather than reluctance and fear to act in a faster and more responsive way to the Russian aggression, and committed acts of terror not only in Ukraine but also in other military conflicts initiated by this state (e.g., Republic of Moldova, Georgia, Chechen Republic, etc).

Methods included:

1) project work, where students worked on projects that involved dictionary research and the collection of Russian, Ukrainian, and English phraseological / idiomatic expressions reflecting behavioral patterns of people who are speakers of the mentioned languages in connection with their origin per geographies;

2) essays, as students were requested to write these, analyzing their findings, discussing how these expressions correlate with Russian actions and deeds in the war, comparing and contrasting

linguistic and cognitive worldviews of Russians, Ukrainians, and English speakers, and providing recommendations as part of solution-based approach for perspective local and global developments.

This stage integrated linguistic components with socio-linguistic and socio-political contexts, encouraging students to explore the interplay between language and behavior.

Regarding the evaluation criteria, students' projects and essays were evaluated based on depth analysis, relevance, coherence, and originality. The key focus was laid if students mentioned the scope of their research and limitations of their studies.

Stage 4. *Follow-up survey and questionnaire.* The objective was to measure changes (ascending trend / descending trend in expression of tolerance, equality, and diversity / or none) in students' attitudes and understanding the differences in linguistic and cognitive worldviews among Russians, Ukrainians, and English-speaking world, after the intervention (**Fig. 4.1**).

Methods employed included surveys and questionnaires administered to all participants, mirroring the initial survey to allow for comparison.

Follow-up Survey and Questionnaire

Objective: To measure changes in students' attitudes and understanding of the differences in linguistic and cognitive worldviews among Russians, Ukrainians, and the English-speaking world, after the intervention.

Section 1: Demographic Information
1. Gender:
- Male - Female - Non-binary/Other
2. Educational Background:
- a Bachelor student - a Master student
3. Origin / place of residence
- Kyiv and northern Ukraine - eastern Ukraine - western Ukraine - southern Ukraine

Section 2: Attitudes towards Russians, Russian Language, and Culture
4. On a scale of 1 to 5, with 1 being strongly negative and 5 being strongly positive, how would you rate your attitude towards Russians as a nation?
1 (Strongly negative) 2 (Negative) 3 (Neither negative nor positive) 4 (Positive) 5 (Strongly positive)
5. Today, as compared to your communication habits previously, how comfortable would you feel communicating in Russian?
A Very comfortable *B* Comfortable *C* Neutral *D* Uncomfortable *E* Very uncomfortable
6. How interested are you in learning about Russian culture and history? Why?
A Very interested *B* Interested *C* Neutral *D* Not very interested *E* Not interested at all

Section 3: Tolerance and Understanding
7. How important do you think tolerance towards people from different cultures is for maintaining social harmony?
A Extremely important *B* Very important *C* Moderately important *D* Slightly important *E* Not important at
8. How important do you think tolerance towards the Russian people is for maintaining social harmony? Why?
A Extremely important *B* Very important *C* Moderately important *D* Slightly important *E* Not important at
9. What factors do you believe contribute to intolerance towards other cultures, including Russian?

Section 4: Impact of Russia-Ukraine War on Attitudes
10. Do you believe the Russia-Ukraine war has influenced your attitudes towards Russians, the Russian language, and culture?
A Yes *B* No *C* I'm not sure/I don't know.
If yes, please briefly explain how the war has influenced your attitudes.

_____

11. If there have been changes in your opinions or attitudes towards Russians, the Russian language, and culture since the intervention, please describe them briefly.

Section 5: Final Comments
Do you have any additional comments or thoughts on poly- and multiculturalism, tolerance, or attitudes towards Russians, the Russian language, and culture?

_____

This survey aims to assess any shifts in attitudes and understanding following the intervention. Your feedback is valuable for evaluating the effectiveness of the program. Thank you for your participation.

Fig. 4.1 Follow-up survey and questionnaire

4.2.3 DATA COLLECTION AND ANALYSIS

The data collection focused on detected changes in attitudes towards Russian culture, language, and overall tolerance levels. Quantitative data referred to pre- and post-surveys that collected quantitative data on students' attitudes and tolerance levels; statistical analysis conducted using software tools to compare pre- and post-intervention responses, measuring changes in tolerance, and understanding of multiculturalism by bachelor and master students. Qualitative data displayed open-ended responses, which were analyzed thematically to identify common themes and insights into students' perceptions and attitudes; essays based on completed projects, which were evaluated qualitatively to assess depth of understanding and ability to apply phraseological knowledge in cultural analysis.

Informed consent was obtained from all participants, ensuring they were aware of the study's purpose and their right to withdraw at any time. Moreover, participants were assured that their responses would be used solely for academic purposes and that they could withdraw from the study at any time without any academic penalty. Confidentiality was maintained throughout the study, with all responses anonymized to protect participants' identities. Next, academic integrity was ensured by adhering to ethical guidelines for research involving human subjects.

This mixed-methods approach allowed for a comprehensive examination of how teaching phraseology can enhance multicultural understanding and tolerance. The combination of quantitative and qualitative data provided a robust framework for analyzing the effectiveness of educational interventions in promoting intercultural competence and cultivating multiculturalism as an effective basis to decrease stress among students and foster more understanding at the cognitive level in situations where empathy as a term may hardly be applicable. By involving students from diverse backgrounds and regions of Ukraine, including those whose families were victims, which experienced humiliation and tortures by Russian soldiers, the study ensured a broad perspective as to the impact of phraseological instruction on cultural empathy and understanding, cultivating multiculturalism, and enhancing intercultural competence among students in Ukraine.

Ultimately, the findings from this study are expected to contribute to the development of more effective language education curricula that foster cultural empathy and understanding not only in Ukraine but also projected for educational contexts in global perspective, where applicable.

4.3 OBSERVATIONS, OUTCOMES, AND KEY TAKEAWAYS

The results of this study are presented in four sections corresponding to its Stages: Initial survey and questionnaire, Teaching phraseology, Semester projects and essays, and Follow-up survey and questionnaire. The findings include both quantitative data from surveys and qualitative data from student projects and essays.

4.3.1 FINDINGS OBTAINED AT STAGE 1

Stage 1 of the research aimed at the initial survey and questionnaire that provided baseline data on students' understanding of poly- and multiculturalism (**Fig. 4.2**), as well as their tolerance levels towards Russians as a people, the Russian language, and culture.

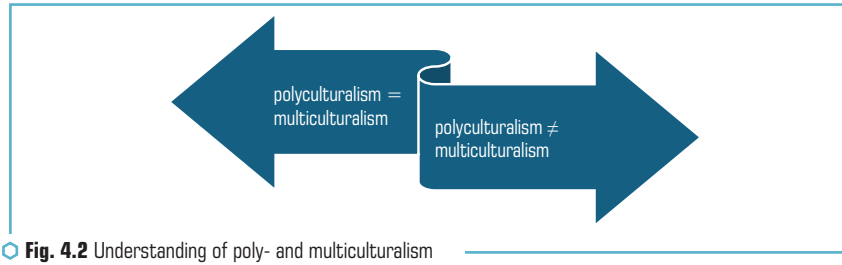

Fig. 4.2 Understanding of poly- and multiculturalism

To this part, it is relevant to note the initial lack of clear difference between poly- and multiculturalism as bachelor and master students in majority of cases could hardly see any discrepancy in the terms and their usage. To be exact, 93 % of respondents mentioned that these two terms could be used interchangeably as synonyms (**Fig. 4.3**).

As demonstrated above, **Fig. 4.2** illustrates the dual responses of bachelor and master students regarding their understanding of poly- and multiculturalism, from which the following key insights can be drawn:

1) most respondents (93 %) perceive poly- and multiculturalism as interchangeable terms;

2) only a small percentage of respondents (7 %) differentiate between poly- and multiculturalism. The latter means that this lack of differentiation suggests a limited understanding of the nuances between the two concepts among the students surveyed.

This is evidenced by another part of the administered survey and questionnaire, focused on students' attitudes towards Russians, Russian language, and culture (**Table 4.1**), where on a scale of 1 to 5, with 1 being strongly negative and 5 being strongly positive, students were invited to rate their attitude towards Russians as a nation, the Russian language and culture, and communication in Russian.

Table 4.1 Attitudes towards Russians, Russian language, and culture, and communication in Russian

Inquiry	Attitude, %		
	Negative	Neutral	Positive
Russians as a nation	96	4	0
Comfort level in communicating in Russian	81	3	16
Interest in learning about Russian culture and history	76	5	19

Source: survey results

Survey Questionnaire: Understanding of Polyculturalism, Multiculturalism, and Attitudes towards Russians, Russian Language, and Culture

This survey aims to assess your understanding of poly- and multiculturalism, as well as your attitudes towards Russians, the Russian language, and culture, in the context of the Russia-Ukraine war. Please read each question carefully and select the response that best represents your understanding and attitudes.

Demographics

1. Gender:
- Male - Female - Non-binary/Other

2. Educational Background:
- a Bachelor student - a Master student

3. Origin / place of residence
- Kyiv and northern Ukraine - eastern Ukraine - western Ukraine - southern Ukraine

Understanding of Poly- and Multiculturalism

4. How would you define polyculturalism?
A The celebration and integration of multiple cultures into society
B The coexistence of diverse cultural groups within a community
C The belief in the superiority of one's own culture over others
D I'm not sure/I don't know

5. How would you define multiculturalism?
A The celebration and integration of multiple cultures into society
B The coexistence of diverse cultural groups within a community
C The belief in the superiority of one's own culture over others
D I'm not sure/I don't know

Differentiation Between Poly- and Multiculturalism

6. Do you believe there is a difference between polyculturalism and multiculturalism?
A Yes *B* No *C* I'm not sure/I don't know

7. If yes, please briefly explain the difference between polyculturalism and multiculturalism in your own words.

_____

Attitudes towards Russians, Russian Language, and Culture

8. On a scale of 1 to 5, with 1 being strongly negative and 5 being strongly positive, how would you rate your attitude towards Russians as a nation? Why?

_____

9. Today, as compared to your communication habits previously, how comfortable would you feel communicating in Russian?
A Very comfortable *B* Comfortable *C* Neutral *D* Uncomfortable *E* Very uncomfortable

10. How interested are you in learning about Russian culture and history? Why?
A Very interested *B* Interested *C* Neutral *D* Not very interested *E* Not interested at all

_____

Tolerance and Understanding

11. How important do you think tolerance towards people from different cultures is for maintaining social harmony?
A Extremely important *B* Very important *C* Moderately important *D* Slightly important *E* Not important at all

12. How important do you think tolerance towards the Russian people is for maintaining social harmony? Why?
A Extremely important *B* Very important *C* Moderately important *D* Slightly important *E* Not important at all

_____

13. What factors do you believe contribute to intolerance towards other cultures, including Russian?

_____

14. Have you personally experienced or witnessed discrimination based on cultural differences?
A Yes *B* No *C* I'm not sure/I don't know.

15. If yes, please briefly describe the experience or situation.

_____

Impact of Russia-Ukraine War on Attitudes

16. Do you believe the Russia-Ukraine war has influenced your attitudes towards Russians, the Russian language, and culture?
A Yes *B* No *C* I'm not sure/I don't know.

17. If yes, please briefly explain how the war has influenced your attitudes.

_____

Final Comments

18. Do you have any additional comments or thoughts on poly- and multiculturalism, tolerance, or attitudes towards Russians, the Russian language, and culture?

_____

Thank you for participating in this survey. Your input is valuable for our research.

Fig. 4.3 Survey questionnaire: understanding of polyculturalism, multiculturalism, and attitudes towards Russians, Russian language, and culture

According to the survey results, the students' attitudes towards Russians as a nation opt to display negativity with most respondents (96 %), who expressed their negative attitudes towards Russians, with only 4 % having a neutral stance and none having a positive attitude. This suggests a significant level of negativity or bias towards Russians among the surveyed individuals.

The other question was to test the students' comfort level in communicating in Russian, especially relevant for eastern regions and the city of Kyiv inasmuch most students are found to be bilingual and feeling at ease to fluently communicate either in Ukrainian or Russian. However, the findings revealed that a large portion of respondents (81 %) reported feeling uncomfortable communicating in Russian; only 3 % expressed a neutral stance, while 16 % reported feeling comfortable. It is followed that the high percentage of respondents feeling uncomfortable indicates their unwillingness to engage in communication using the Russian language because of the current growing trend of intolerance to Russians as aggressors and documented crimes by the Russian soldiers in Russia-Ukraine war.

The other question to discover students' interest in learning about Russian culture and history unveiled a significant percentage (76 %) of answers that indicated a lack of such interest as opposed to 5 % of respondents who expressed a neutral stance, and only 19 % who showed interest in learning about Russian culture and history, respectively. This suggests a limited curiosity or appreciation for Russian culture and history among the surveyed individuals at ***Stage 1*** of the study.

Overall, the data reflects a predominantly negative outlook towards Russians, the Russian language, and culture, with a notable lack of interest in communicating in Russian and learning about Russian culture and history. These attitudes may be influenced by various factors, including past and present historic events, cultural perceptions, and geopolitical tensions. Addressing these attitudes may require efforts to promote cross-cultural understanding and dialogue among the surveyed population.

4.3.2 FINDINGS OBTAINED AT STAGE 2

Stage 2 of the study focused on inclusion of some Russian phraseological / idiomatic expressions into the curricula and their comparison / contrast with the samplings obtained by students from *Contemporary Phraseological Dictionary* (Russian idioms of 21st century), and phraseological dictionaries (dictionaries of idioms) of the Ukrainian and English languages. The research and academic work stretched beyond the classroom as students were invited to explore linguistic preferences of lay people outside the university walls, focusing on their speeches and idiomatic usage if any.

From the Russian phraseological expressions, the key four thematic groups turned to be highly representative according to students' notes. These groups build around such nuclei of respective phraseological fields, accounting for their lexical and semantic weight:

1) HAND(s);

2) MILITARY component in idioms used for routine and professional life;

3) verbs such as BEAT, BREAK, TWIST;

4) HELL, particularly.

As demonstrated in **Fig. 4.4**, the phraseological / idiomatic expressions develop round the HAND nucleus, embodying into such units as below:

– RU *тактика выкручивания (выламывания) рук* (taktika vykruchivaniya / vylamyvaniya ruk), literally translated as *tactics of twisting / breaking hands*, means "a method of applying rough pressure, coercion to achieve a favorable solution for oneself" [26];

– RU *выкручивать руки кому, выкручивание (выламывание) рук* (vykruchivat' ruki komu, vykruchivaniye (vylamyvaniye) ruk), literally translated as "to twist someone's hands, twisting (breaking) hands", with its definitions: *expressive usage* 1. Forcibly force someone to do something. 2. *New, journalism*. To use rough pressure or pressure to influence someone, to forcefully achieve a solution to an issue that is beneficial for oneself [26];

As emphasized by Mokienko [26], the expression is associated with the forceful methods of people's struggle (1st meaning) and the way police treat troublemakers and prisoners (2nd meaning).

– RU *пропускать / пропустить через руку (руки) кого* (propuskat' / propustit' cherez ruku (ruki) kogo), literally "to let through the hands of someone", that means "*Slang*. Beat up someone (often in a group)" [26];

– RU *держать руку на кислородном шланге [кого, чего]* (derzhat' ruku na kislorodnom shlange [kogo, chego]), literally translated as "to hold a hand on the oxygen hose [of someone, something]" that stands for "*New, journalism*. Hold someone or something in complete dependence, absolute submission, threatening to deprive something, not provide something" [26]; as noted by the scholar, this expression comes from medical practice, where seriously ill patients are supported with oxygen from an oxygen cushion.

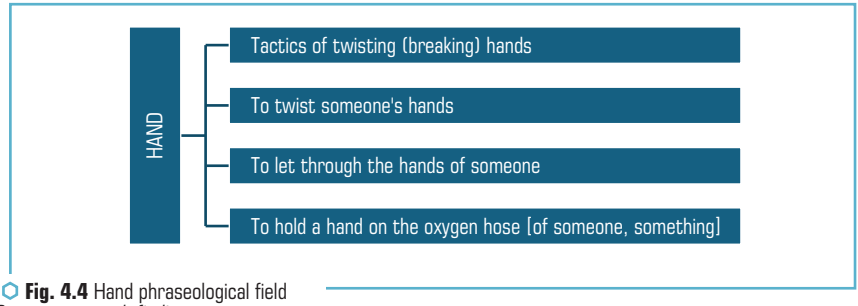

Fig. 4.4 Hand phraseological field
Source: research findings

The analysis of the findings demonstrates that the above contemporary Russian idiomatic expressions, developed around the concept of HAND(s), symbolize absolute power and control, the authority to decide matters of life and death, and the imposition of one's will over others.

They depict a narrative of dominance and coercion, where individuals exert forceful influence to achieve their desired outcomes, as observed in various societal contexts.

The other thematic group centers on lexical units that denote a military component and are frequently used in routine communication by Russian speaking people, often without paying much attention to the etymology of such phraseological / idiomatic expressions. Some are provided below along with the description and in **Fig. 4.5**.

Fig. 4.5 Russian phraseological / idiomatic expressions with a military component
Source: research findings

The representative examples of Russian military-centered phraseological / idiomatic expressions are as below:

– RU *переть как танк* (peret' kak tank), literally translated as "to go / move / drive like a tank" with the definition "to act rudely, harshly, ignoring the reaction of other people" [26];

– RU *Вся страна – единый военный лагерь* (Vsia strana – yediny voyennyy lager'), translated literally as "The whole country is a single military camp"; this expression signifies a unified national effort or mobilization, often used in times of war or crisis to emphasize national solidarity and collective action [30, 31];

– RU *призвать под боевые знамена* (prizvat' pod boyevyye znamena) / RU *вставать (встать) под. знамя (знамена)* (vstavat' (vstat') pod znamya (znamena)), literally translated as "to call to the battle flags" and "to stand under the banner(s)" that denotes the act of rallying individuals to join in a military campaign or conflict, urging them to take up arms and fight for a common cause [27];

– RU *разбить наголову* (razbit' nagolovu), literally translated "to break over the head"; this idiom refers to forcefully defeating or overwhelming someone, often in a physical or metaphorical sense, by striking a decisive blow or delivering a crushing defeat [27];

– RU *истребители танков* (istrebiteli tankov), literally translated "tank destroyers" that typically refers to military units or weapons specifically designed and deployed to destroy enemy tanks, either through direct combat or specialized tactics [32];

– RU *рассечь боевые ряды противника* (rassech' boyevyye ryady protivnika), literally translated "to cut through the enemy's battle lines"; this idiom describes the strategic or tactical maneuver of breaking through the enemy's formations or defenses, disrupting their lines of communication, and creating openings for further offensive actions [30, 33].

Thematic Group 3 of contemporary Russian phraseological / idiomatic expressions includes such verbal nuclei of phraseological fields as BEAT, BREAK, and TWIST presented in **Fig. 4.6**.

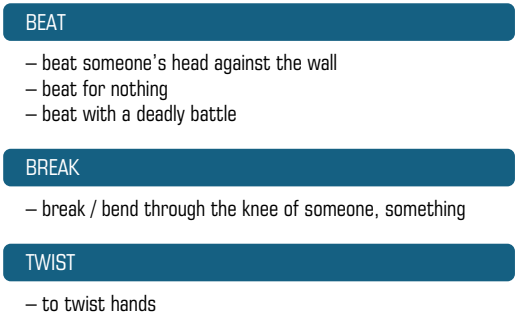

Fig. 4.6 Beat, Break, and Twist as nuclei of phraseological field for contemporary Russian idioms
Source: research findings

The examples of such Russian phraseological / idiomatic expressions are below:

– RU *бить головой о стену кого* (bit' golovoy o stenu kogo), literally translated as "to beat someone's head against the wall", with the definition: *Colloquial*. Used with such subjects of the sentence as life, reality, etc. and meaning "to severely punish, put in an extremely difficult situation" [28];

– RU *бить почём зря (избить), лупить (отлупить)* (bit' pochom zrya / izbit', lupit' / otlupit'), literally translated as "to beat for nothing / to beat up, to beat severally / to beat up, etc.", that denotes "*Colloquial*. To beat very strongly" [28];

– RU *ломать (сломать) через колено кого, что; гнуть (согнуть) через колено кого, что* (lomat' / slomat' cherez koleno kogo, chto; gnut' / sognut' cherez koleno kogo, chto), literally translated as "to break / to bend through the knee of someone, something; to bend / to fold through the knee of someone, something", that means "*Colloquial. Disapproving*. Used with a subject of a sentence, meaning a person. To crudely suppress someone; destroy, nullify something" [28];

– RU *бить смертным боем* (bit' smertnym boyem), literally translated as "to beat with a deadly battle", denoting 'to beat very strongly' [27] that means to inflict severe and relentless physical punishment;

– RU *бить наверняка* (bit' navernyaka), literally translated as 'to beat for sure', which means "to act accurately, with confidence in success" and denotes performance of an action with precision and certainty of achieving the intended result [27];

– RU *бить (прямо) в цель* (bit' (pryamo) v tsel'), literally translated as "to beat (directly) into the target", meaning "to act purposefully, successfully achieving the desired result" that stands for hitting the mark exactly, ensuring successful outcomes through targeted actions [27];

– RU *бить мимо цели* (bit' mimo tseli) literally translated as "to beat past the target", defined as "to act unsuccessfully, not achieving the desired result", that means to fail to hit the intended mark, resulting in ineffective actions [27];

– RU *разделывать (отделывать) под орех кого-л.* (razdelyvat' / otdelyvat' pod orekh kogo-libo), literally translated as "to smash / process (finish off) like a nut someone", defined as "to achieve a complete victory in a dispute or fight over someone" [27], that stands for the action "to thoroughly defeat someone in an argument or physical confrontation";

– RU *выдирать (выдрать) с мясом что* (vydirat' / vydrat' s myasom chto), literally translated as "to tear out / to rip out with meat (= flesh) something", meaning "Colloquial. To completely destroy something" [28];

– RU *выкручивать руки кому, выкручивание (выламывание) рук* (vykruchivat' ruki komu, vykruchivaniye (vylamyvaniye) ruk), literally translated as "to twist someone's hands, twisting (breaking) hands", with its definitions: *expressive usage* 1. Forcibly force someone to do something. 2. *New, journalism*. To use rough pressure or pressure to influence someone, to forcefully achieve a solution to an issue that is beneficial for oneself [26].

What should be noted here is that the Russian scholars themselves may provide different definitions for the same Russian phraseological / idiomatic expressions. For instance, RU *выкручивать руки кому, выкручивание (выламывание) рук* (vykruchivat' ruki komu, vykruchivaniye / vylamyvaniye ruk), literally "to twist hands" denotes:

– "1. Forcibly force someone to do something. 2. New, journalism. To use rough pressure or pressure to influence someone, to forcefully achieve a solution to an issue that is beneficial for oneself" [26];

– "*New. Colloquial. Disapproving*. To force someone to agree to something by putting them in a desperate situation. Arm twisting" [28].

As the findings reveal the studied Russian idioms predominantly revolve around themes of aggression, coercion, violence, and negatively colored comparisons. The Russian phraseological / idiomatic expressions like *тактика выкручивания рук* "tactics of twisting (breaking) hands" and *выкручивать руки кому* "to twist someone's hands" depict forceful tactics to achieve one's goals.

Others like RU *пропускать через руку кого* "to let through the hands of someone" and *ломать через колено кого* "to crudely suppress someone; destroy, nullify something" suggest violent actions or severe punishment.

Another thematic group identified with the contemporary Russian phraseological / idiomatic expressions rounds about the HELL nucleus, for example:

– RU *ад войны, сражений* (ad voyny, srazheniy) with its literal translation "hell of war, hell of battles" [27] that refers to the intense and horrifying nature of war and battles, which is a norm for the Russian mindset as the war is the war, and every war incurs victims, sufferings, and horror, which is hell;

– RU *ад огня* (ad ognia), with its literal translation "hell of fire" [27] that refers to the destructive and terrifying nature of fire.

It is followed that these phraseological / idiomatic expressions reflect a linguistic and cognitive perception of Russians connected with imperialistic views and behaviors. The prevalent use of aggressive and intolerant language may indicate underlying attitudes and societal norms. By classifying these idioms into thematic groups, such as coercion, violence, and aggression, it becomes evident that they contribute to a narrative of dominance and control. This correlation between linguistic expression and cognitive perception highlights the influence of language on shaping societal values and behaviors.

Therefore, the prevalence of contemporary Russian idioms centered around aggression and intolerance underscores the importance of promoting empathy, understanding, and peaceful communication in cross-cultural interactions. Addressing the underlying attitudes and stereotypes embedded in language can contribute to fostering a more inclusive and tolerant society.

4.3.3 FINDINGS OBTAINED AT STAGE 3

The primary goal of this stage was to engage students in the practical application and analysis of phraseological and idiomatic expressions, particularly focusing on the analysis of some that could shed light on better understanding of linguistic and cognitive worldviews of Russians, especially in the light of the Russia-Ukraine war. This approach aimed to deepen students' reflection and raise their awareness of current developments both locally and internationally. Additionally, it sought to encourage students to cultivate empathy and tolerance irrespective of the geopolitical developments, foster an understanding of the EU and the world's commitment to democratic and humane values, as well as to highlight the need for a proactive and supportive stance towards Ukraine in response to Russian aggression.

At ***Stage 3***, students undertook projects involving dictionary research to collect and analyze Russian, Ukrainian, and English phraseological and idiomatic expressions. They focused on how these expressions reflect the behavioral patterns of speakers from different geographies. A significant finding from this work was that many Russian idioms had no direct equivalents in Ukrainian and English, whereas English idioms often had equivalents in Ukrainian and vice versa.

Besides, students were required to write essays analyzing their findings. They discussed how the collected expressions correlate with Russian actions and behaviors in the war, compared the linguistic and cognitive worldviews of Russians, Ukrainians, and English speakers, and provided recommendations for local and global developments. This stage integrated linguistic components with socio-linguistic and socio-political contexts, encouraging students to explore the interplay between language and behavior.

Of significant value were certain phraseological / idiomatic expressions in the English and Ukrainian languages, as commented by students:

– EN *do not make fish of one and flesh (or fowl) of another* – a proverb, which equivalent is UA *стався до всіх справедливо* (stavsia do vsikh spravedlyvo) "treat everyone fairly" [29];

– EN *hold a candle to one, to* / UA *допомагати комусь; грати допоміжну роль по відношенню до когось* (dopomahaty komus'; hraty dopomizhnu rol' po vidnoshenniu do kohos') "to help someone; to play a secondary role in relation to someone" [29];

– EN *hold (one, something) dear, to* / UA *(високо) цінувати (когось, щось); рахуватися з (кимсь, чимсь)* ((vysoko) tsinuvaty (kohos', shchos'); rakhuvatysya z (kyms', chymys')) "to value someone or something highly; to consider someone or something" [29];

– EN *hold (one, something) in veneration / in high veneration, to* / UA *(глибоко) поважати, шанувати (когось, щось); відчувати побожність (до когось, чогось)* ((hlyboko) povazhaty, shanuvaty (kohos', shchos'); vidchuvaty pobozhnist' (do kohos', chohos)) "to deeply respect, honor someone or something; to feel reverence towards someone or something" [29];

– EN *hold out / proffer an (the) olive branch, to* / UA запропонувати помиритися; намагатися уладнати справу мирно; піти на мирову [маслинова гілка вважається символом миру] (zaproponuvaty pomyrytysia; namahatysia uladnaty spravu myrno; pity na myrovu [maslynova hilka vvazhajetsia symvolom myru]) "to offer to make peace; to try to settle matters peacefully; to propose a truce [the olive branch is considered a symbol of peace]" [29];

– EN *heart and hand / with heart and hand* / UA *охоче, з енергією, з ентузіазмом; усім серцем* (okhohche, z enerhiyeyu, z entuziyazmom; usim sertsem) "willingly, with energy, with enthusiasm; wholeheartedly" [29];

– EN *heart and soul / with all one's heart and soul; with all one's soul* / UA *з ентузіазмом, ревно, щиро; всім серцем; вкладаючи всю душу* (usually used with such verbs as *to go into, to put into*) (z entuziyazmom, revno, shchyro; vsim sertsem; vkladayuchy vsu) "with enthusiasm, fervently, sincerely; with all one's heart; putting all one's soul into" [29];

– EN *heart to heart talk, a* / UA *щира розмова* (shchyra rozmova) "a sincere conversation" [29];

– EN *man-to-man talk, a* / UA *щира розмова* (shchyra rozmova) "a sincere conversation" [29].

The analysis revealed that many contemporary Russian idiomatic expressions are centered around themes of aggression, control, and violence. For instance, idioms developed around *the hand* often refer to absolute power and control, as seen in expressions like "tactics of twisting", "breaking hands" and "holding a hand on the oxygen hose", which metaphorically depict coercion and dominance; as opposed to these Russian phraseological / idiomatic expressions, the English and Ukrainian variants also include the core element – HAND, e.g., EN *heart and hand / with heart and hand*, however, used in much more positive light, meaning to do something for somebody willingly, with energy, with enthusiasm, i.e., wholeheartedly.

The thematic grouping of these phraseological / idiomatic expressions suggests a correlation between linguistic expressions and the cognitive perceptions of Russians, reflecting their imperialistic views and behaviors, which strongly contrasts with the more balanced and humane expressions found in Ukrainian and English idioms, often emphasizing fairness, support, respect, and sincerity.

A significant insight from students' project work was that many Russian idioms had no direct equivalents in Ukrainian and English, indicating unique cultural and behavioral patterns in Russian phraseology. Conversely, English idioms frequently had equivalents in Ukrainian, highlighting a closer cultural and cognitive connection between Ukrainian and English speakers.

This contrast highlights the significant role that language plays in shaping and reflecting cultural and behavioral patterns, underscoring the importance of promoting democratic and humane values through linguistic education and analysis.

4.3.4 FINDINGS OBTAINED AT STAGE 4

The objective of this stage was to measure changes, if any, in students' attitudes and understanding of the differences in linguistic and cognitive worldviews among Russians, Ukrainians, and the English-speaking world, after the intervention. We aimed to identify whether there was an ascending trend, descending trend, or no change in the expression of tolerance, equality, and diversity after the students had been acquainted with lexical, including phraseological, corpus of the Russian language, particularly (**Table 4.2**).

Table 4.2 Attitudes towards Russians, Russian language, and culture, post-intervention

Inquiry	Attitude, %		
	Negative	Neutral	Positive
Russians as a nation	96	4	0
Comfort level in communicating in Russian	69	12	19
Interest in learning about Russian culture and history	32	7	61

Source: survey results

Comparing the post-intervention data with the pre-intervention data reveals notable changes in attitudes towards Russians, the Russian language, and culture, except for perceiving Russians as a nation. In this section, there has been no change in attitudes towards Russians as a nation post-intervention. The percentage of respondents with negative attitudes remained at 96 %, while those with neutral attitudes stayed at 4 %, and there were no positive attitudes reported (0 %). This indicates that the intervention did not lead to any significant shift in perception regarding Russians as a nation.

Regarding comfort level in communicating in Russian, there was a noticeable improvement in comfort levels according to the post-intervention findings (**Table 4.3**). The percentage of respondents with a negative attitude decreased by 12 %, moving from 81 % to 69 % – a descending trend, while the percentage of those with an ascending positive attitude increased slightly – from 16 % to 19 %.

Table 4.3 Comparative attitudes towards Russians, Russian language, and culture, post-intervention

Attitude Measure, based on negative threshold	Pre-intervention, %	Post-Intervention, %
Attitude towards Russians (1–5 scale)	96	96
Comfort level in communicating in Russian	81	69
Interest in learning about Russian culture and history	76	32

Source: survey results

With interest in learning about Russian culture and history, the post-intervention results show that there is a substantial increase in positive attitudes towards learning about Russian culture and history. The percentage of respondents with a positive attitude rose significantly from 19 % to 61 %, indicating a greater ascending interest in cultural understanding and more sympathy for Russians, often explained average Russian is seen a victim of Russian propaganda being continuously exposed to "rewritten" historical facts that aimed to whitewash Russian crimes in history. This shift can be attributed to several factors, including a heightened awareness of the importance of cultural heritage, a desire to preserve it, and a recognition of the need to counter Russian propaganda and historical revisionism.

Many students explained that they now see the value in learning about Russian culture and history as a means of understanding their own cultural heritage and the tactics employed by Russia to manipulate historical narratives. They recognize the importance of countering false information and propaganda spread through mass media and digital platforms. This increase in positive attitudes suggests a growing empathy and sympathy towards Russians, often perceived as victims of manipulation and misinformation.

Finally, these changes suggest that the intervention has had a positive impact on students' attitudes and perceptions towards Russians, the Russian language, and culture. The shift towards more positive attitudes and increased interest in learning reflects a potential improvement in understanding and tolerance. However, further analysis is required to assess the long-term effects of the intervention and its sustainability.

4.4 EXPLORING THE EDUCATIONAL IMPACT, CULTURAL INSIGHTS, AND LINGUISTIC CONNECTIONS

Based on the challenges the students found in differentiating poly- ad multiculturalism in ***Stage 1*** of the study, it was aimed to pay more attention to theoretical backgrounds and deeper reflection what makes poly- and multiculturalism important for the modern world. Thus, poly- and multiculturalism are seen as two approaches to cultural diversity that offer distinct frameworks for understanding and engaging with different cultures. From this perspective, multiculturalism celebrates the diversity of cultures within a society or community [5, 34]; it encourages individuals to embrace their cultural heritage while engaging with others in a respectful and open-minded manner.

In a multicultural context, the focus is on preserving distinct cultural identities and ensuring that various cultural groups coexist peacefully. However, this approach does not necessarily lead to the assimilation or acceptance of the values of other cultures. Multicultural communication denotes a community comprising multiple cultural or ethnic factions where individuals coexist within the same space, but meaningful interactions between cultural groups may not always occur.

Next, polyculturalism, on the other hand, goes beyond mere coexistence and emphasizes the appreciation and assimilation of different cultures as well as their values [35]. Polyculturalism promotes the idea that cultures are not static or isolated but are constantly interacting, influencing, and enriching each other, considering the X, Y, and Z generations in structuring their cultural perceptions [36]. In a polycultural framework, individuals are encouraged not only to understand and respect different cultures but also to integrate aspects of these cultures into their own lives. This approach fosters a deeper level of intercultural engagement and mutual appreciation, leading to a more dynamic and interconnected cultural landscape.

According to the students' initial feedback in the survey and questionnaires, in the light of the ongoing Russia-Ukraine war, the significance of acquainting the world with Ukrainian phraseology has become more pronounced. It is the insight that is characterized by shared reflection of the students related to the importance of acquainting the world with Ukrainian phraseology as part of the Ukrainian language and culture, standing the linguistic and cognitive frameworks, which strongly supports findings of O. Tarnopolsky and B. Goodman [37], L. Azarova et al. [38], L. Bondarchuk et al. [39].

The students comment that the historic Russian genocide against the Ukrainian people in the Holodomor of 1932–1933 was not the only measure the Russian imperialistic regime would adopt to erase everybody and everything of Ukrainian character [40].

The students bring to discussion that acts of genocide may be encoded in other current deeds of Russians when the Ukrainian children are removed from their homes and are subjected to "russification", thus, forbidden from speaking Ukrainian or expressing their Ukrainian identity. This involves mandatory exposure to the Russian language and culture, pervasive propaganda, Russian historical narratives, requires visits to Russian "patriotic" sites, military training of the Ukrainian children, and denigration of Ukrainian language, culture, and history.

As highlighted in the report of the *Committee on Migration, Refugees and Displaced Persons*, and oral opinion of the *Committee on Social Affairs, Health and Sustainable Development, the Parliamentary Assembly of the Council of Europe*, "The full-scale war of aggression waged by the Russian Federation against Ukraine represents a massive and ongoing violation of international law and a tragedy of human suffering. The forced displacement of Ukrainian civilians, particularly of children from an early age up to 17 years, to the Russian Federation or within temporarily occupied Ukrainian territories, is an especially serious feature of this aggression" [41] leads to recognition of the need for immediate international intervention and support. This displacement is not merely a logistical issue but a deliberate strategy to undermine Ukrainian national identity and cultural heritage. It underscores the urgency for global communities to condemn these actions,

provide humanitarian aid, and implement measures to protect and preserve the rights and identities of displaced Ukrainian children.

Moreover, "the practice of "re-education" of the children […]", known as "russification", "implies a prohibition from speaking the Ukrainian language or expressing in any way their Ukrainian identity and culture, compulsory exposure to the Russian language and culture through classes, blanket exposure to the prevailing propaganda through the media, teaching of the Russian version of history" [41], "the forcible transfer of children to the Russian Federation and within temporarily occupied territories of Ukraine, to be placed in foster families, Russian-run orphanages or residential facilities, including "summer camps", and the facilitation of adoption of such children by Russian families" [41], "…"filtration" of Ukrainian civilians by the Russian military and Russian-affiliated officials, including intrusive searches of their bodies and belongings, aggressive interrogation and the extraction of vast amounts of personal and biometric data" [41] underline the gravity of the developments and endeavours of Russians to erase the Ukrainian language, culture, and history, which highlights the urgent need to preserve and promote Ukrainian cultural heritage. With that in mind, Ukrainian phraseology, rich with historical and cultural references, offers a unique window into the national identity, values, and experiences of the Ukrainian people.

Comparative and contrastive studies of Ukrainian phraseology not only serve to document and preserve this heritage but also to educate the global community about the distinctiveness and resilience of Ukrainian culture. These studies can foster a deeper understanding of the cultural and linguistic diversity that defines Ukraine, promoting empathy and solidarity in the face of aggression. Furthermore, such scholarly work can counteract the narratives imposed by the aggressor, reinforcing the importance of linguistic and cultural preservation in maintaining national identity amidst conflict.

It is assumed under the study that understanding Ukrainian phraseology can play a crucial role in fostering global awareness and appreciation of Ukrainian culture, particularly in the face of aggression and attempts to suppress it. In educational environments, when studying Ukrainian idiomatic expressions and proverbs and integrating some aspects into international curricula, educators and researchers can help to preserve and disseminate the cultural knowledge embedded in the language, ensuring that it is recognized and valued internationally.

Stage 2 of the study focused on analysing Russian phraseological expressions related to aggression and negative behaviours, particularly in the context of the Russia-Ukraine war. The findings revealed that a significant prevalence of the 21st century Russian idioms centred around violence, coercion, and dominance, reflecting a culture where forceful methods are often normalized or even glorified. "The dominant features of phraseological neology are predominantly negative semantic fields (deception, theft, drunkenness, idleness, aggression, etc.)" [26]. Moreover, they exhibit a distinct thematic focus on aggression and irony, reflecting what V. Mokyenko terms as the "anti-culture" and the stylistics of mockery, "a particular activation of spheres reflecting the semantics of aggression ("anti-culture") and the stylistics of irony (mockery)" [26].

We fully agree with V. Mokyenko [26] as he concludes the preface to the dictionary with the following conclusion for the Russian language and culture: "There is a certain specificity of the figurative potential (respectively, motivational dominants) and axiological selectivity of phraseological neology. On this basis, it is still necessary to determine and describe the specificity of the phraseological "worldview" against the background of the corresponding "views" of traditional idiomatics and neological vocabulary" [26].

The follow-up survey aimed to measure changes in students' attitudes and understanding of linguistic and cognitive worldviews following the intervention. The results demonstrated a noteworthy shift in perception, except negative attitudes towards Russians. The lack of change in negative attitudes towards Russians in the follow-up survey can be attributed to the ongoing war between Russia and Ukraine. Despite efforts to foster understanding and empathy through linguistic analysis and cultural exploration, the stark realities of the Russia-Ukraine war continue to shape perceptions and attitudes.

The persistent negative attitudes towards Russians likely stem from the ongoing actions and behaviours exhibited by the Russian government and military forces in the war. Reports of torture, killings, shelling of civilian areas, and deliberate destruction of Ukrainian infrastructure, including energy facilities and cultural institutions, have contributed to a deep-seated resentment and animosity towards Russia among Ukrainians and observers worldwide.

Moreover, the deliberate targeting of educational and cultural centres, such as schools, universities, theatres, and libraries, underscores a systematic effort to undermine Ukrainian identity and culture. By destroying educational resources and cultural landmarks, Russia seeks to erase the Ukrainian language and heritage from the region, leaving future generations with limited access to their own history and literature.

In this context, the findings of the follow-up survey reflect the enduring impact of the war on perceptions and attitudes. Despite efforts to promote understanding and tolerance, the harsh realities of war and aggression perpetuated by Russian forces continue to fuel negative sentiments towards Russians. Until there is a significant shift in the behaviour and actions of the Russian government in the war, it is unlikely that attitudes towards Russians will change substantially.

Nevertheless, there was a substantial increase in positive attitudes towards learning about Russian culture and history. This shift suggests a greater interest in cultural understanding and empathy towards Russians, potentially influenced by the intervention's emphasis on understanding the complexities of cultural narratives and historical truths amidst the war.

Overall, these findings underscore the importance of linguistic analysis in understanding cultural perceptions and attitudes. The approach as adopted and aimed to delve into phraseological expressions enabled the research to gain insights into the underlying values, beliefs, and attitudes prevalent within the Ukrainian society; it is followed that Mokyenko's work as well as those by other scholars provided a valuable framework for understanding the intricacies of phraseological neology and its implications for cultural discourse.

CONCLUSIONS

The study highlights the nuanced relationship between language, culture, and the Russia-Ukraine war, which is explained by educational endeavours of university personnel to cultivate empathy and tolerance among students, grow intersocial and democratic values via fostering multiculturalism in academic settings. Through a deeper exploration of phraseological / idiomatic expressions (Russian, Ukrainian, and English as designed by research objectives, particularly), it was possible to uncover the underlying ideologies and worldviews shaping societal attitudes and behaviours. Mokienko's insights further enrich our understanding of the role of language in reflecting and shaping cultural narratives, offering valuable perspectives for navigating complex socio-political contexts.

This study also underscored the profound impact of phraseology as a pedagogical instrument in cultivating multiculturalism among philology students, particularly against the tumultuous backdrop of the Russia-Ukraine war. This war, far from being an isolated incident, serves as a stark reminder that history tends to echo its past, urging societies to remain vigilant and proactive in fostering understanding and tolerance. With that in mind, through the lens of phraseology, the research illuminates the intricate linguistic diversity and cultural awareness, offering a pathway towards greater inclusivity and harmony. It is a testament to the resilience of education in navigating complex geopolitical landscapes and shaping a more enlightened future.

As we reflect on these findings, it becomes evident that by embracing the richness of linguistic diversity, we pave the way for a more interconnected and empathetic society, where differences are celebrated rather than feared. In essence, this research journey underscores the enduring relevance of phraseology in the quest for multicultural understanding. It is a call to action, reminding of the transformative power of education in shaping a world, where peace and tolerance reign supreme.

While this research has shed light on the potential of phraseology in fostering multiculturalism among philology students, it is important to acknowledge its limitations and areas for further investigation. One limitation is the scope of the study, which focused primarily on the attitudes and perceptions of bachelor and master students within a specific academic setting, i.e., only three Ukrainian universities. Future research could explore the efficacy of phraseology in different educational contexts and among diverse student populations to ascertain its broader applicability.

Additionally, the study's reliance on the reported data may introduce biases and limitations inherent to participants and within their ability to critically assess the developments. Incorporating qualitative methods, such as interviews or focus groups, could provide deeper insights into the nuanced ways in which phraseology influences cultural awareness and linguistic skills.

Furthermore, while the research has highlighted the impact of phraseology in the context of the Russia-Ukraine war, there is a need for longitudinal studies to assess the long-term effects of phraseology education on students' attitudes and behaviours.

To conclude, the study results represent an important step towards understanding the role of phraseology in promoting multiculturalism, however, further research is needed to address its limitations and explore its potential in diverse educational settings and contexts.

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CHAPTER 5

CONSCIOUS MANAGEMENT OF TRANSFORMATIONS: THE CONCEPT OF INNOVATIVE MANAGEMENT OF EDUCATIONAL INSTITUTIONS

ABSTRACT

Justifying the relevance of the topic, the authors refer to the following methodological assumptions: triad fragility – stability – antifragile; conclusions about the possibility of "the emergence of order from chaos"; alternative future development; conclusions about the presence of internal connections of a self-organized system with an external environment. A multidisciplinary approach was used during the research; various scientific directions were integrated; results of theoretical scientific research and practical activities. Receptivity to the new is defined as the ability of an individual to perceive signs of the new and to be guided by the formed idea in its practical activities. The classification is presented according to predefined classification features within the definition of receptivity to the new: a form of knowledge of reality; leading aspects of the perceived object; dominant feelings; field of activity; components of the subject's experience; cognitive-emotional processes; environment of selected information; hierarchical level of the management entity.

Traits of a personality susceptible to new things are outlined. Identification of different types of receptivity to the new is given on the examples of autobiographical data of A. Fleming, W. Röntgen, I. Duncan, F. Haber, H. Ford, S. Jobs, historical socio-political events.

The means of developing individual and group receptivity to the new are revealed. Among the means of developing personal receptivity to the new, the following are presented: an idea creation algorithm, creative problem solving technologies, special exercises and techniques based on the principles of non-linear thinking. From the point of view of formation of team and organizational values, development of collective search and decision-making skills, importance is gained by corporate training in such modified forms as active training methods; modern management models and technologies; coaching training technologies. The issues of creating an idea management system are considered, as such, which stimulates the development of receptivity to the new within the organization, institution, institution.

KEYWORDS

Receptivity to the new, cognitive function, regulatory function, classification features, form of knowledge of reality, leading aspects of the perceived object, dominant feelings, field of activity.

Recognition of variability as a leading feature of a person's lifestyle, along with the acquisition of basic knowledge, poses the following urgent task to modern education: to teach students to independently master new knowledge and information, forms and methods of learning, to perceive and produce changes, to develop the need for lifelong learning. Personal characteristics that, according to experts, will contribute to the acquisition of new competencies are "open consciousness", a heightened sense of the new, the ability to "catch, perceive new things" [1]; the ability to respond to challenges "mentally and physically" [2]. For example, living in the world of nanoseconds, nanometers [1], virtual worlds [2], etc.

In our opinion, today the selection is carried out in favor of individuals capable of living in marginal states. "Tsvishens", from an ontological point of view, is a person who is permanently in a state of alternation, who is in a situation "between" (reevaluation of values, reorientation of goals, etc.); in the context of the outlined problem – in the situation of permanent updating of one's own knowledge, abilities, skills.

The slogan "Education for life!" no longer works. "Lifelong education" is a response to rapid changes in information and technologies that must be constantly mastered.

Receptivity to the new becomes the main personal resource, the resource of innovative production, the dominant resource for achieving a stable balance of economic and social development under the conditions of co-evolution of rational innovations and socio-cultural traditions, which enables the productive modernization of social development.

Sustainable economic development requires the formation of optimal conditions for increasing the receptivity of employees to innovative activities, as a continuous source of creating competitive advantages of the organization, institution, and country. The accumulation of such abilities is becoming a global trend. In turn, interest causes the ability of some people, groups, organizations not only to emerge victorious from difficult life, production, business situations (which seem impossible to predict), but also to benefit from them.

Such different situations force us to look for appropriate social and psychological-pedagogical technologies, require employees to be able to combine the application of innate and acquired qualities with the requirements of the environment. Innovative structures require from the employee a special flexibility of thinking, an effective system of perception, an internal need for creativity, a unique form of self-realization and integration into the social system.

The importance of the outlined questions is substantiated by A. Yevtodiuk, P. Kukhta, V. Pekar, I. Prigozhin, N. Taleb, H. Haken and other authors. However, the concept of receptivity to the new remains undefined, its classification is not concluded, its characteristics are not disclosed.

In view of the above, the purpose of the article is based on the application of a multidisciplinary approach and the integration of various scientific directions, the results of theoretical scientific research; of experience, opinions and beliefs – the results of practical activity, to justify the definition, to present the author's classification, to outline the traits of a personality receptive to the new, to reveal the possibilities of the development of individual and group receptivity to the new.

In this study, the authors support the understanding of interdisciplinarity as a scientific and pedagogical innovation that gives rise to the ability to see, recognize, perceive what is inaccessible within the boundaries of a single science (discipline) with its specific, narrowly oriented object, subject and research methods [3].

Receptivity to the new is a rather complex, multifaceted and multi-vector phenomenon, which can be investigated using the potential of an interdisciplinary approach. An interdisciplinary approach helps to overcome the narrowness of the pedagogical view and to enrich pedagogical science with the achievements of modern economic, sociological, philosophical, and psychological sciences in relation to a given topic. With the help of the application of the achievements of other sciences related to a certain topic, the integration of the latter is achieved at the level of construction of interdisciplinary objects, subjects, the study of which allows to obtain new scientific knowledge (in our case, in relation to receptivity to the new).

In the process of scientific research, scientific work from philosophy, sociology, economics, psychology, pedagogy was analyzed in terms of relevance, objective necessity, and the possibility of targeted influence on the development of receptivity to a new individual, group, organization (institution).

A relatively small number of works on receptivity to the new motivated the expediency of a comprehensive understanding of materials devoted to this problem. In particular, the sources used during the scientific search and which are referred to in the publication were studied (all types of publications: monographs, articles, abstracts of scientific works, conference materials, examination results, interviews with practitioners).

5.1 DEFINITION

N. Taleb in the book "Antifragile: things that gain from disorder" introduces the term antifragile as the opposite of fragility in the triad of fragility – resilience – antifragile [4]. Taleb introduces the concept of "antifragile" – the ability of systems not just to be invulnerable and resistant to a crisis (in contrast to fragile systems that a crisis destroys and kills), but on the contrary, the ability to emerge from a crisis even stronger than they were before it.

A. Yevtodiuk [5], I. Prigozhin [6] and other authors [7] investigate within the framework of social synergy nonlinear changes and processes of self-organization that arise in an unstable society, which justify the possibility of "the emergence of order from chaos." It is obvious that within the chaos there are signs of future order (possible orders). At the moment of bifurcation, it is necessary to take into account the alternative nature of the future development and the peculiarities of the non-linear behavior of society.

I. Prigozhin [6], H. Haken [8] note that a characteristic feature of developing open systems is their ability to self-organize. That is, during the exchange of information with the external environment, the self-organized system is able to select information that contributes to development. Accumulating, evolutionary transformations lead to qualitative changes in the state of the system.

That is, there are signs of the future in the present. In our opinion, the acquisition of a new quality, a new order will depend on the nature of perceived potential opportunities. The nature of the future order will be determined by a set of selected features.

By definition, perception is a form of knowledge of reality based on perception and feeling [9]. Perception (formed on the basis of perception and feeling) – reflection of objects and phenomena in their visual integrity, formation of an idea about objects [9].

That is, perception is the result of perception (involuntary and voluntary), during which information about individual properties of an object is combined into a sensory image and interpreted as information generated by objects or events of the surrounding environment [10].

The selection of signs of the new can be caused by the features of the surrounding objects and information: their brightness, location, unusualness, as well as a person's personal interest in them; can be characterized by the fact that a person sets a goal to perceive something and makes willful efforts for it.

Perception, in unity with the comprehensive characteristics of the object, also reflects the subject's multifaceted life (its outlook, past experience, interests, aspirations, hopes). The formed representation (consciously or unconsciously) performs a regulatory function – directs the subject's practical activity according to these properties of objects.

In our case, perception of the new is a form of knowledge of reality based on the perception and feeling of signs of the new in society, science, art, etc. Perception of the new (formed on the basis of perception and feeling of the signs of the new) – anticipatory design of objects and phenomena according to the signs of the new, formation of ideas about the objects of the future.

That is, the perception of the new is the result of perception (involuntary and arbitrary), during which information about changes in individual properties of an object is combined into a not yet clear image and interpreted as information about objects or events that will take place in the future. In the following, the perception of the new performs two interrelated functions: cognitive and regulatory. The lack of clarity stimulates the process of further learning about the characteristics of the object; forecasting uses all the previous experience of the subject (emotional, cognitive, practical), its outlook, interests, aspirations, hopes. At the neurolinguistic level, a regulatory function is launched – the direction of the subject's practical activity according to the received information (or in the direction of the desired future).

Thus, receptivity to the new is the ability of an individual to perceive signs of the new (future) and to be guided by the formed idea (consciously or unconsciously) in its practical activities. Receptivity to the new is the degree to which an individual is relatively ahead of other members of its social system in perceiving new ideas, phenomena, discoveries that will determine the future.

5.2 CLASSIFICATION OF RECEPTIVITY TO THE NEW ACCORDING TO CLASSIFIED CLASSIFICATION SIGNS

The development of a classification of receptivity to the new is relevant.

During the development of the author's classification of receptivity to the new, we understood the classification as a multi-level, consistent division of the scope of the definition of receptivity to the new in order to systematize, deepen and obtain new knowledge about the members of the division [11]. The result of classification should be a system of subordinate concepts: a divisible concept is a genus, and new concepts (members of the division) are species of this genus, subspecies of species, etc. [12]. At the same time, each stage of division was carried out on a different basis. In this way, a system of distribution of objects by groups was formed according to predetermined features within the definition of receptivity to the new.

The divisive (generic) concepts of the classification of the definition of receptivity to the new are defined as follows:

– form of knowledge of reality;
– leading aspects of the perceived object;
– dominant feelings;
– field of activity;
– components of the subject's experience;
– cognitive-emotional processes;
– environment of selected information;
– hierarchical level of the management entity.

Below we present the system of distribution of objects according to defined divisive (generic) concepts within the definition of receptivity to the new.

Based on the form of knowledge of reality, we distinguish involuntary and voluntary receptivity to the new.

Depending on the leading aspects of the perceived object, we distinguish the following types of receptivity to the new: receptivity to new changes in space, time, movement, shape of objects.

Feelings can be the dominant basis of receptivity to the new (distant, contact, deep) can be the dominant basis of receptivity to the new. Accordingly, we distinguish receptivity to new visual, auditory, olfactory, gustatory, tactile, tactile, pain, receptivity to new depth sensitivity (internal organs, muscle sensitivity, etc.).

By branch, we distinguish the receptivity to new things in society, science, art, etc.

As already mentioned, the perception of the new, forecasting uses all the previous experience of the subject, which makes it possible to isolate the receptivity to the new, depending on which part of the subject's experience is involved and, in turn, the formation of which part of the future experience is aimed at. In particular, this is the perception and formation of new outlooks; emotional, cognitive and practical experience in relation to the object of research. Receptivity to the new can be "turned on" (involuntarily or arbitrarily) by the subject's interests, aspirations, and hopes.

According to the cognitive-emotional processes that stimulate the detection, we distinguish analytical, synthesizing, analytical-synthesizing, emotional receptivity to the new.

According to the environment of the selected information, we distinguish receptivity to external and internal information.

According to the number of people involved:

– individual;

– group (innovation, project group);

– collective (enterprise, organization, institution).

Separately, we pay attention to the receptivity to new subjects of management, which, accordingly, makes it possible to distinguish by the hierarchical level of the subject of management (head of a structural component of an enterprise, organization, institution; head of an enterprise, organization, institution; government body of a country; region; industry) that exerts one or another influence on the economic policy of management objects.

Qualitative characteristics of receptivity to the new cause natural interest.

In order to acquire the properties of antifragile (according to N. Taleb), one must be flexible and mobile, ready to take risks – both for loss and for gain, have fixed costs and, in case of success, potentially unlimited gain, and, of course, seek possibilities [13]. It is appropriate to mention the saying attributed to W. Churchill: "A crisis is always an opportunity".

A. Subetto [14] emphasizes the need for a specific critical attitude to the past (which led to the crisis, chaos), which "does not exclude", but "takes with it" all that contributes to the exit from the crisis, that which, from the standpoint of guarantee survival, could be called truly intelligent.

I. Prigozhin [6], H. Haken [8] note that a characteristic feature of developing open systems is their ability to self-organize. That is, during the exchange of information with the external environment, the self-organized system is able to select information that contributes to development.

According to G. Poincaré's famous statement, mind has creative power only when experience forces it to do so [15]. It is about the active involvement of the factor of the future and its influence on the formation of new trends in the development of science, technology, and education. In our opinion, it is about the desire to survive, to endure, to continue to develope.

From this point of view, it can be considered that any crisis is an impetus for development. A large number of people, by their very nature, are able to radically change only after getting into a hopeless, at first glance, situation. In our opinion, it is precisely in crisis situations that previously selected potentials (opportunities, strategies, behavioral patterns) can be realized. After all, "...nothing will come out of nothing".

N. Tyshchenko considers readiness to move forward and quickly implement decisions, ability to change in response to external challenges to be an important trait [16].

Summarizing, it is possible to list the traits of a personality receptive to the new:

– an active attitude to the future, "attracting the factor of the future";

– a critical attitude to the past, which "takes" with it everything that contributes to the exit from the crisis, further development;

– flexibility and mobility, readiness to take risks;

– ability to self-organize;

– ability to change in response to external challenges.

The basis of receptivity to new things, like any other ability, is the potential of its bearer. In the UN Development Program, the concept of "potential" is defined as the ability of people, organizations, and communities to consistently perform certain functions, solve problems, and set goals [17].

In our case, it is the potential of the ability to perceive signs of the new (future) and to be guided by the formed idea (consciously or unconsciously) in one's practical activities; the potential ability of an individual or a group of other members of their social system to be relatively ahead in the perception of new ideas, phenomena, discoveries that will determine the future. This ability is borderline with professional, commercial, life, etc., intuition. The term "potential development" characterizes the task of increasing the level of such abilities (in our case, receptiveness to new things) of people and institutions.

5.3 EXAMPLES OF DETECTING DIFFERENT TYPES OF RECEPTIVITY TO THE NEW

Scientific intelligence autobiographical information of outstanding personalities (A. Fleming, W. Röntgen, I. Duncan, F. Haber, H. Ford, S. Jobs, etc.), historical events (the Great French Revolution of the 18th century, the struggle for independence and the establishment of the independence of the United States America in the 18th century, the Paris Commune in the 70s of the 19th century, the October Revolution of 1917 in Russia, the Chinese Revolution in the late 40s of the 20th century, etc.) drew the author's attention to the discovery of different types of receptivity to the new in different people in different historical periods.

It is relevant to generalize information regarding the detection of different types of receptivity to the new according to the identified classification features in different people in different historical periods.

In the author's classification of the definition, feelings can be the dominant basis of receptivity to the new to the new is defined by the following divisible (generic) concepts:

– form of knowledge of reality;
– leading aspects of the perceived object;
– dominant feelings; field of activity;
– components of the subject's experience;
– cognitive-emotional processes;
– environment of selected information;
– hierarchical level of the management entity.

Based on the form of knowledge of reality, we distinguish involuntary and voluntary receptivity to the new.

Involuntary (unintentional) receptivity to new things occurs when a person does not set a goal to perceive something and does not make an effort of will for it.

For example, the discovery of penicillin (which saved and still saves the lives and health of a large number of people) by A. Fleming is attributed to his sloppiness and a random coincidence of

circumstances. While researching the flu, he did not wash the laboratory dishes in time and did not throw away the flu cultures for several weeks. So, one day, in one of a large number of unwashed Petri dishes, he discovered mold, which, to his surprise, suppressed the seeded culture of staphylococcus bacteria. A. Fleming left the cup on the laboratory table and went to rest. Alternating cold and warming in London created favorable conditions for the growth of mold and bacteria. In our opinion, in addition to the coincidence of circumstances, arbitrary receptivity to the new (prepared by previously acquired special knowledge and experience) worked.

Arbitrary, purposeful receptivity of the new is characterized by the fact that a person sets a goal to perceive something and makes willful efforts for it. In our opinion, the combination of involuntary and arbitrary receptivity of the new served W. Röntgen in the discovery of X-rays. At first, during his experiments, his attention was drawn to the fact that a vague greenish cloud appeared on the chemically cleaned screen at a distance of several feet. And then, by concentrating for several weeks on the cause of the glow, it was discovered that the cause of the glow was the direct rays coming from the cathode ray tube, that the radiation produced a shadow, and that it could not be deflected by a magnet – and many other things. In addition, it turned out that human bones cast a denser shadow than soft tissues, which is still used in radiography.

Depending on the leading aspects of the perceived object, we distinguish the following types of receptivity to the new: receptivity to new changes in space, time, movement, shape of objects. We imagine that it can be both a reaction to changes in the object that have taken place, thereby starting the process of changes in the environment (for example, service functionality), and predicted changes in space, time, movement, form (will cause a change in the object, service functionality, etc.).

Feelings can be the dominant basis of receptivity to the new (distant, contact, deep) can be the dominant basis of receptivity to the new. Accordingly, we distinguish receptivity to new visual, auditory, olfactory, gustatory, tactile, tactile, pain, receptivity to new depth sensitivity (internal organs, muscle sensitivity, etc.). The emergence and development of impressionism in painting, sculpture, and music are demonstrative and illustrative of the specified classification feature. The choreography includes Isadora Duncan's "free" dance, based on her own feelings caused by the music. It is appropriate, in our opinion, to mention doctors who resorted to self-infection with the disease in order to describe the symptoms and effects of treatment based on their own feelings.

By branch, we distinguish the receptivity to new things in society, science, art, etc.

As already mentioned, the perception of the new, forecasting uses all the previous experience of the subject, which makes it possible to isolate the receptivity to the new, depending on which part of the subject's experience is involved and, in turn, the formation of which part of the future experience is aimed at. In particular, this is the perception and formation of new outlooks; emotional, cognitive and practical experience in relation to the object of research. Receptivity to the new can be "turned on" (involuntarily or arbitrarily) by the subject's interests, aspirations, hopes (which, in turn, causes a favorable or inhibitory effect).

This is precisely how we explain the fact of the influence of ideology on social changes in various countries of the world in the last two or three centuries. Political parties and social movements, which carried out radical transformations in all spheres of society's life, were guided by ideological doctrines, ideals, and programs that became a direct impetus for change.

The Great French Revolution of the 18th century, the struggle for independence and the establishment of the independence of the United States of America in the 18th century, the Paris Commune in the 70s of the 19th century, the October Revolution of 1917 in Russia, and the Chinese Revolution in the late 40s of the 20th century remained the most significant in world history, etc. It is believed that all of them were carried out under the banner of the struggle for the implementation of certain ideological principles and values (liberal-bourgeois, Marxist-Leninist, Maoist, etc.).

The most progressive modern ideology can be the ideology of creating a state whose goal is happiness of all citizens [18].

According to the cognitive-emotional processes that stimulate the detection, we distinguish analytical, synthesizing, analytical-synthesizing, emotional receptivity to the new.

Thus, the patriotic desire to serve his homeland was driven by F. Haber, a German chemist of Jewish origin, laureate of the Nobel Prize in Chemistry, for his contribution to the synthesis of ammonia, necessary for the production of fertilizers and explosives; the father of chemical weapons.

Henry Ford was stimulated by a passion for invention, the desire to invent a "carriage that moves itself" and then endlessly improve it (the author of 161 US patents), which led him to develop a technological line (conveyor), and finally – to establish the production of a "car for everyone".

S. Jobs' real talent was not in building computers, but rather in anticipating the wants and needs of potential consumers; understanding the transformative impact of personal gadgets.

F. Haber, H. Ford, S. Jobs influenced the formation of the world in which we live today.

According to the environment of the selected information, we distinguish receptivity to external and internal information.

In particular, for the closed model of the innovation process, the sensitivity to internal information is important, which at first glance can solve all the problems related to the innovation process independently within the enterprise, organization, institution. For example, Medtronic (USA) owns 25 research centers in which 45,000 employees produce innovations [19].

If we extrapolate certain provisions of nanotechnology to the indicated question ("nano" means one billionth (10^{-9} power) part of anything) and take into account that there are more than 6 billion people on the globe, we can conclude that every person is a potential carrier of the proposal, which will change the performed work, technological process, etc., for the better. The combination of such nano-proposals can cause a cumulative effect and lead to significant changes.

In the context of the theory of open innovation, sensitivity to external information, receiving valuable offers from partners, end users, and constructive cooperation with competitors becomes important. According to H. Chesbrough, open innovations are "valuable ideas that can come both from the company itself and from outside and can be provided on the market as a result of both the actions of the company itself and other structures" [20].

According to the number of people involved, we distinguish individual, group (innovation, project group), collective (enterprise, organization, institution) receptivity to the new.

Separately, we pay attention to the receptivity to new subjects of management, which, accordingly, makes it possible to distinguish by the hierarchical level of the subject of management (head of a structural component of an enterprise, organization, institution; head of an enterprise, organization, institution; government body of a country; region; industry) that exerts one or another influence on the economic policy of management objects.

5.4 INDIVIDUAL AND GROUP RECEPTIVITY TO THE NEW, POSSIBILITIES OF THEIR DEVELOPMENT

Today's fast-moving world requires a high level of receptivity to the new. The winners are those who, faster than others, are able to respond to new changes in science, production, education, society, perceive them, reflect, and implement what is planned. The logical issue is the development of individual and group receptivity to the new.

Concepts, possibilities, methods of development of receptivity to the new in everyday activities and in the learning process were studied by G. Altshuller [21], A. Bandura [22], T. Wujek [23], S. Kuzheva [24], W. Lazier [25], V. Nikolko [26], N. Sas [27–29], A. Sitnikov [30], A, Shevyirev [31].

Personal receptivity to the new can be developed by mastering the idea generation algorithm, the technology of creative problem solving, special exercises and techniques based on the principles of non-linear thinking. The most famous of the individual ways of finding new ideas are: direct analogy, personal analogy, fantastic analogy [32].

Direct analogy – ready-made solutions of similar tasks in other areas of knowledge are used, with their subsequent adaptation.

For example, the analogue of a salt shaker in medicine is saline solution (the same table salt, but dissolved in water), which is usually introduced into the body through a needle from a syringe or a dropper. Well, we have already received the idea of a new salt shaker with a concentrated salt solution that is squeezed out through a narrow opening, and this fruitful idea can be further developed.

Personal analogy – it is suggested to enter the role of the object that needs to be invented, to concentrate on feelings and ways to solve the problem. Imagine yourself as a salt shaker with a holey metal lid on your head and listen to your inner feelings. Yes, it is not very pleasant when you are shaken upside down over a plate of hot soup. It is much more comfortable to be in a natural position. The new salt shaker must have a dispenser and a hole on the bottom side – you press the button from above, the lid opens from below and the necessary portion of salt is poured into the plate. Very intelligent and no risk of getting burned.

A fantastic (fairy tale) analogy suggests introducing fantastic means or characters into the task: "Sit down more comfortably, I will tell you a fairy tale. This happened in those distant times, when people did not have salt shakers yet. And when they needed salt, they came to the giant

Salty sedge and chopped off pieces of rock salt from him with huge axes, and then at home they broke these pieces into smaller pieces with a hammer. One poor family ran out of salt, but there was no one to go to the store because dad was working and mom was sick. Then the two small children went to the cliff by themselves, but they did not have enough strength to break off even a tiny piece. They grieved at first, and then thought and decided to sing a humorous song. The Rock laughed, laughed so hard that tears fell from his eyes, and each tear turned into a salt bead. Smart children collected these beads and took them home".

That's how another idea was born.

It is not easy to use analogies, and, most importantly, this technique does not relieve painful creative searches.

S. Silvanovich [33], A. Sitnikov [30] believe that the formation of an effective innovative personality orientation is possible on the basis of mastering **psychophysiological technologies** aimed at the ability to:

– carry out self-programming, to change certain qualities, to block oneself from the accumulation of negative emotions;

– effectively use internal resources;

– to motivate, as a manager, both itself and it subordinates to achieve long-term goals;

– take a look from the future.

NLP (neuro-linguistic programming) techniques can be particularly effective for activating creative thinking, and the simplest of them is "resource anchoring". The essence of this technique is to consciously and at the right moment summon and use one's psychological resources, for example, the state of creativity, mastery, perfection. In order to create an "anchor", it is necessary to recall cases from your life when such a resource manifested itself most intensively: situations in which you gushed with ideas, easily generated brilliant solutions, were overflowing with creative forces and inspiration. Then immerse yourself in the memories, recreate that resource state of yours and feel again. Choose an anchor – a kind of "button" that will trigger the desired state. It can be a tactile sensation, a sound, a visual image. Next, return once again to the experience of the resource state of creativity and, after waiting for the peak of its intensity, put an anchor, for example, touch a point on the brush of the left hand. Repeat several times. Check – if the anchor is set – touching the selected point on the left hand brush automatically reproduces the resource state of creativity. Then – pour out ideas.

A deeper technique is reframing. The word "reframing" literally means "to put in a new frame", it is used in NLP to denote the process of changing the perception of a situation. "Going beyond" one's own and collective stereotypes is the basis of any creativity. Reframing requires some training or the help of an NLPier, but the results are worth it.

One of the postulates of NLP shows that what at least one person in the world can do, others can repeat. NLPiers study the creativity of prominent figures and shoot models from them. Walt's Creativity Strategy can be very helpful Disney, a description of which can be found in special psychological literature.

Its essence is that the process of generating new ideas is separated from their criticism, which removes internal barriers. W. Disney mentally placed three characters in the corners of his room – the Dreamer, the Critic and the Realist.

Then he incarnated in each of them in turn. Taking the place of the Dreamer, he put forward new ideas, indulged in fantasies. Having moved to the Critic's corner, he looked for flaws and weak points, smashing the rainbow castles of the Dreamer to pieces. Moving to the corner of the Realist, Disney weighed all the pros and cons and looked for the best option. The effectiveness of such a strategy has been proven by the entire career of W. Disney, who went from a poor animator to the creator of a multi-billion dollar empire and became one of the most successful businessmen in the world.

Even more profound techniques, based on the incredible possibilities of our subconscious, are based on the use of trance states. It looks like this. The formulated goal is to invent Super salty. After a few vague phrases spoken by the specialist or the subject himself, the latter is "disconnected" from reality for a short time, and then he returns back with a ready-made idea of a wonderful Super salty. The usual miracle happened.

The analysis of modern research revealed contradictions between the need for people with a high level of receptivity to the new in the conditions of a constantly changing environment (the presence of special personal and professional qualities, the complexity of activities, etc.), and the absence of developed effective programs for their development.

From the point of view of the possibility of self-improvement of the flexibility of thinking, increasing the level of receptivity to the new, increasing the desire to acquire new knowledge of innovative management, the self-control program developed on the basis of the social-cognitive theory of A. Bandura [22], which was detailed by D. Watson and R. Tharp, is of interest.

D. Watson and R. Tharp suggested that the process of behavioral self-control consists of five main steps. They included defining the behavior to be influenced, collecting baseline data, designing a program to develop the desired behavior, implementing and evaluating the program, and terminating the program:

1. Determination of the form of behavior. The initial level of self-control is identifying the exact behavior that needs to be changed. Unfortunately, this crucial step is much more difficult than you might imagine. Many of us tend to think of our problems as certain negative personality traits, and it takes a lot of effort to accurately describe those traits. Regarding the problem under consideration, it may be desirable to develop flexibility of thinking, increase the level of receptivity to new things, increase the desire to acquire new knowledge, etc. Innovative management requires finding ways to finance innovative activities, successfully promoting one's institution, which, in turn, requires being in contact, being able to convince, prove, interest, etc. To determine the limitations of professional activity, it is advisable to use the questionnaire "Analysis of your limitations" [34].

2. Collection of basic data. The second step of self-monitoring is gathering basic information about the factors influencing the behavior we want to change. Regarding our problem, it can be: learning to see the same objects from different angles; to learn the technique of removing criticism

and idealization that prevent creation, to motivate oneself to further develop one's receptivity to the new. Choose exercises and tasks, appropriate algorithms, technologies for finding ideas that contribute to the activation of thinking, arm yourself with methods of combating psychological inertia, form skills for solving creative tasks, that is, transform the process of creative thinking from chaotic to clearly organized and controlled. It is also important to choose a time to perform the exercises, some of them can be performed in the morning while taking a shower or in the evening before going to bed, try to record the time, circumstances, environment in which the maximum effect of the exercises is achieved. In fact, we must become like a scientist who observes our own reactions and their manifestations, recording their frequency for feedback and evaluation. In social-cognitive theory, the collection of accurate data about the behavior to be changed is not at all similar to the global self-understanding that is emphasized in other therapeutic techniques.

3. Development of a self-control program. The next step in the process of changing your behavior is to develop a program that will effectively change the repetition of a specific behavior. According to A. Bandura, changing the frequency of repetition of this behavior can be achieved in several ways. Basically, this is self-reinforcement, self-punishment and planning of the environment.

Self-reinforcement. Self-reinforcement in social-cognitive theory means that the individual encourages and rewards itself, and it is able to control this process. At the third stage, you should determine what consequences (pleasant events, situations, etc.) will have the character of self-reinforcement for you. In the process of work, you need to constantly encourage yourself to act in the desired way. Although the basic strategy is quite simple, some tips for developing an effective self-reinforcement program will be useful. First, since behavior is controlled by its consequences, it obliges a person to organize these consequences in advance in order to influence the behavior in the desired way. Second, if in a self-control program self-reinforcement is the best strategy, it is necessary to choose a reinforcing stimulus that is actually available to the person. The leading motive in the system of self-reinforcement for the head of an educational institution is the expectation of success and attractiveness, the provision of positive guidelines for organizing one's behavior, the conscious loss of options for successful actions and decisions – increasing self-efficacy.

Self-punishment. In order to reduce the repetition of unwanted behavior, you can also choose a strategy of self-punishment.

You can remember preparing for exams at school age. Many people, having not studied the planned number of tickets during the day, punish themselves by planning to study twice as many tomorrow. However, a significant disadvantage of punishment is that many people find it unnecessary to constantly punish themselves if they fail to achieve the desired behavior. To cope with this, you should remember two guidelines. First, if learning skills are the problem, it's best to use punishment in conjunction with positive reinforcement. Combining aversive and pleasurable self-regulated consequences is likely to help implement a behavior change program. Second, it is better to use a relatively mild punishment: this will increase the probability that it will really be self-regulating. The balance of situational self-reinforcement and self-punishment is highly individual.

Environment planning. In order for unwanted reactions to occur less frequently, it is nec-

essary to change the environment in such a way that the stimuli preceding the reactions or the consequences of these reactions are changed. To avoid temptation, a person can avoid tempting situations, firstly, or, secondly, punish itself for giving in to temptation.

Our life is determined by our environment. In everything that has happened to you so far, in your past, which you cannot influence now, your immediate environment played a certain role. It makes no sense to question the human qualities and value of those around you. You can continue to love and appreciate them for what you have, but only listening and following their advice on innovative activity, development of innovative management technologies is suicide, except for those cases when they themselves have already achieved something. You will inevitably be influenced by your environment, because every person from childhood uses the same method of learning – imitation. It is not for nothing that they sometimes say: "with whom you behave, you will gain". If you want to strengthen your own innovative capabilities, communicate with successful people, learn to do what they already know how to do. It is best to unite with others of your kind to jointly acquire the necessary knowledge and skills in innovation management.

4. Implementation and evaluation of the self-monitoring program. After the self-modification program is developed, its implementation begins, adaptation to what seems necessary. It must be borne in mind that for the success of a behavioral program, constant vigilance is necessary in the interim period, so as not to return to old forms of behavior. An excellent means of control is a contract with oneself – a written agreement with a promise to adhere to the desired behavior and use appropriate incentives and punishments. The terms of such an agreement must be clear, consistent, positive and fair. It is also necessary to periodically review the terms of the contract to make sure of their expediency: many initially set unrealistic tasks, which often leads to unnecessary complications and despair in the self-control program. To make the program as successful as possible, at least one other person (friend) should participate in it. It turns out that it makes people take the program more seriously. Consequences should also be detailed in the contract, with terms of incentives and penalties. And finally, incentives and punishments should be immediate, systematic and take place in fact, not just verbal promises or verbal intentions.

D. Watson and R. Tharp note several of the most common mistakes in implementing a self-control program. These are situations when a person:

a) tries to accomplish too much, too quickly, setting an unrealistic goal;

b) allows a long delay in encouraging appropriate behavior;

c) establishes weak incentives.

Such programs are not effective enough.

5. Completion of the self-monitoring program. The last step in the process of developing a self-monitoring program is to clarify the conditions under which it is considered complete. In other words, a person must accurately and carefully determine the ultimate goal – regular exercise, reaching a set weight or stopping smoking within a specified period of time. It is useful to complete the self-control program by gradually reducing the frequency of incentives for the desired behavior.

A successfully executed program can simply disappear by itself or with minimal conscious effort on the part of the person. Sometimes a person can decide for itself when and how to end it. The goal is to form new, improved forms of behavior that are preserved forever. Of course, a person should always be ready to restore self-control strategies if maladaptive reactions reappear.

A new approach to managing the development of a manager's personal qualities is **the use of a universal performance indicator system (TPS)**.

A personal system of balanced indicators includes information about a person's personal mission vision, personal key roles, personal success factors, personal performance indicators and tasks, improvement measures. The system of indicators develops one's own sense of self and success and stimulates constant self-improvement (**Fig. 5.1**).

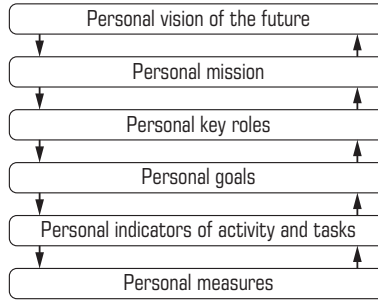

Fig. 5.1 Individual system of balanced indicators
Source: Authors' design

Four elements of a balanced scorecard form an effective tool for determining key success factors (**Table 5.1**).

Table 5.1 Tools for determining key success factors

Element of the scorecard	Success factors
Financial perspective	Financial well-being
External perspective	Perform work at a high level. To move towards success together with colleagues, to maintain an open and harmonious atmosphere. Be a support for children
Internal perspective	Strive for physical and mental health. Be proactive and constantly learn to enjoy your work. Maintain a balance between professional and personal life
The perspective of knowledge and learning	Constantly develop professional qualities

Applying the PDCA model is the next step in the process of self-improvement. The PDCA Cycle, or Deming Cycle, is a model of continuous quality improvement. It consists of a logical sequence of four repeated stages for continuous improvement and learning: PLAN, DO, CHECK and ACT (**Fig. 5.2**).

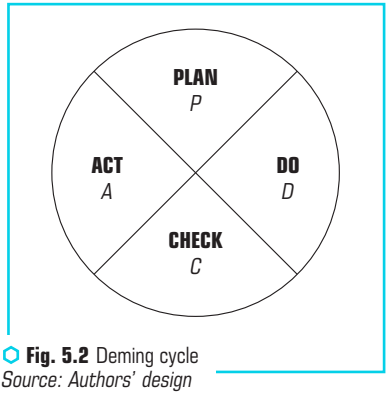

Fig. 5.2 Deming cycle
Source: Authors' design

In our case, the Deming cycle was used to build a self-improvement system with a specific interpretation of it for a specific subject.

Plan:

– development of own balanced system of indicators;

– formulation of a personal balanced system of indicators in such a way that the main attention is paid to work and free time;

– creation of a system of simple goals and appropriate actions for its improvement.

In the work-related part, it is necessary to discuss the system of indicators with the immediate supervisor.

Do:

– carry out all plans;

– involve your manager, colleagues, subordinates, clients, and/or those whom you trust in evaluating your results;

– develop your competencies to achieve your goals.

Check:

– analyze the results in accordance with the established results indicators and their target values;

– find out the degree of fulfillment of own plans, and if necessary, adjust the personal balanced system of indicators;

– together with a trusted person, analyze the system of indicators for the formation of a plan for continuous improvement.

Get over:

– be ready to overcome difficult obstacles and choose more difficult goals;

– choose goals corresponding to new competences and knowledge, when previous improvement actions are no longer inspiring;

– enjoy the improvement process;

– write down everything you have learned;

– observe the improvement of your actions and thinking skills.

Thus, analyzing the results of the assessment of balanced indicators for the past period and now, it can be concluded that after a thorough analysis, a certain subject has determined the necessary priorities for its own development (**Table 5.2**).

A 360-degree evaluation method is proposed for receiving feedback. The 360-degree evaluation refers to the "circular evaluation" of the employee by the immediate supervisor, employees of the corresponding category of its or adjacent departments, subordinates, as well as the employee's evaluation of itself. The purpose of the 360-degree assessment is to determine the level of development of the business qualities of employees.

Table 5.2 Summary table of balanced improvement indicators

Formulation of a personal system of balanced indicators and continuous improvement	Priority 1–5	Current (X) and desired (O) level				
		1	2	3	4	5
Personal vision of the future	4		X		O	
Personal mission	5		X		O	
Personal key roles	5			X	O	
Personal success factors	5			X		O
Personal goal setting	5			X	O	
Personal performance indicators	5			X		O
Target values based on personal goals	5			X	O	
Improvement process	5		X			O
Application of the PDCA model to the process of personal improvement	4	X			O	
Overall assessment						

The assessment procedure includes the following stages:

– preparatory stage;

– survey;

– processing of results;

– preparation of assessment reports.

In the evaluation of the research subject, the following participate:

– the evaluated person;

– senior manager;

– a lower-ranking employee of a subordinate unit;

– the head of the adjacent unit.

The assessment allows the research subject to:

– receive feedback when reviewing the evaluation report;

– better understand your strengths and weaknesses;

– decide on personal development in the direction of career growth.

And if earlier these were mainly short-term goals, without a built line of vision for one's own future, then with the help of these means one can consciously make decisions about the direction of one's development as an individual in the surrounding society.

The solution to any problem involves mastering and using **methods of finding new ideas and acquiring knowledge and skills for solving creative tasks**.

According to A. Shevyirev, "own technology is not only in the production of things, but also in the production of ideas". The head of the educational institution can go all the way to finding a solution on his own or start searching for information about existing solutions.

T. Edison is credited with saying: "If you want to come up with great ideas, know that you can borrow the best ideas". Everything that can benefit the activity of the educational institution is worthy of use.

There are many methods of finding ideas. With some degree of convention, we singled out the following groups: methods of psychological activation of thinking, methods of systematic search, methods of collective search for management solutions, methods of production management, applied as innovative in the management of educational institutions.

Each of the methods aims to facilitate the search for a solution to a creative task compared to the so-called "trial and error" method that a person usually uses. The feasibility of using a method belonging to one or another group depends on the complexity of the problem being solved.

For the individual solution of tasks, it is advisable to use methods of psychological activation of creative thinking and methods of finding alternative options belonging to the first two groups.

Methods of psychological activation of creative thinking are aimed at eliminating the so-called psychological inertia of thinking, which prevents a comprehensive consideration of the problem, hinders the finding of management solutions and new management ideas. These methods include the idea generation algorithm discussed above, creative problem solving technologies, special exercises and techniques, based on the principles of non-linear thinking.

Methods of psychological activation of thinking: in addition to the already described methods of the analogy method, they include the method of focal objects, the RVS operator, the "Method of little men", the "Method of garlands of associations and metaphors", the "Six thinking hats" method, the "Coaching" method, inversion method, idealization method.

Methods of creative search for alternative options contribute to the activation of the management decision-making process and the resolution of problematic issues.

To the methods of systematic search, we include lists of control questions, morphological analysis, functional analysis, functional design method of T. Matchett, method of multiple sequential classification, method of synthesis of optimal forms, method of systematic economic analysis and element-by-element development of constructive solutions, "Five Whys" method.

An indicator of the organization's receptivity to innovations can be the term of introduction of a specific innovation or the total number of innovations accepted for development in a specific organization at a certain time. Thus, the faster the implementation decision is made or the more innovations are mastered in a certain period of time, the higher the organization's receptivity to new things.

The receptiveness of organizations, institutions, and institutions to innovations is a characteristic of their innovation systems, which is expressed in the ability to find innovations that are potentially useful for themselves, adequately evaluate them and rationally choose them, based on the needs and opportunities of their development. The receptivity of organizations, institutions, and institutions to innovations largely depends on such factors as the fact that leaders and teams are aware of the need for the development of the institution (organization, institution), their awareness of existing developments, criticality in the evaluation of the existing ones in the institution (organization, institution) of production, management systems and the quality of innovation assessment methods.

In every institution (organization, institution) there are categories of employees with a high level of receptivity to the new, but there are also specialists who can increase the level of receptivity to the new under the conditions of purposeful training (individual and group).

Among the possible forms of increasing the level of knowledge and skills: independent work, studying at advanced training courses, attending thematic seminars, trainings, consulting specialists on certain issues. The disadvantage of these forms is that a large group of managers, employees of one institution, institution, organization cannot participate in them due to the need to carry out operational management, participation in the production process. From the point of view of formation of team and organizational values, development of collective search and decision-making skills, corporate training becomes important [36].

Corporate training can significantly increase the ability to generate ideas, show creative initiative, put forward original ideas; the ability to manage innovation as a process (make decisions in conditions of uncertainty, take financial and entrepreneurial risks, be able to overcome organizational and psychological difficulties); carry out information provision, analysis of the external environment and internal capabilities, etc. [28, 39, 40].

Among the approaches to the purposeful influence on the collective receptivity to the new, we pay attention to the one that allows us to identify and increase the level of favorability to the new in the activity (we mean active forms of training).

Active learning is widely characterized as a method of forming an innovative component of professional activity in institutions of higher education [39, 40]. Thus, N. Sofiy, V. Kuzmenko con-

sider active learning methods to be means of activating the educational and cognitive activity of students, which encourage them to intensively master the material [41].

M. Diachenko-Bohun interprets active learning methods as a set of measures aimed primarily at the possibility of teaching to think prospectively, non-traditionally, alternatively, at the development of the student's need for knowledge, the emergence of personal interest in the results of work, the formation of a creative approach to tasks [42]. Methods and forms of active learning developed on the examples of higher education institutions can be implemented in the organization of corporate training.

Active learning is based on the principle of the student's direct participation in the educational process, which is focused on finding ways and means of solving the problems studied in the educational course. For this, it is necessary that the educational process be an imitation of the environment in which future specialists work or will work, as well as ensure the formation of abilities for practical tasks, to change and improve the subject world where they live and work.

A high degree of flexibility and adaptability of active learning methods helps the teacher (trainer, speaker) to use them with equal effectiveness in the following cases: at the end of a lecture, story, conversation – as a practical justification of the relevance of the issue raised; in the introduction to a lecture, story, conversation – to formulate a practical problem to be solved; during the illustration of the theoretical provisions outlined in the content of the lecture; presentation of new material, when one part is communicated by the teacher monologue, and the other – using an active method; instead of a lecture, the topic of the lesson is revealed by using an active method.

In line with the analysis of this issue, T. Vakhrusheva [43], G. Vershinina [44] specify the tasks that are solved by introducing active methods into the process of training future specialists in innovation management:

– subordinate the learning process to the actions of the teacher (coach, speaker);

– ensure active participation in educational work of both trained and untrained participants;

– implement educational functions (consolidate theoretical knowledge; practice new techniques and methods; find out the conditions of application of acquired knowledge and practical skills; form methods of cognition and activity, self-development and self-realization);

– perform management functions (work out the management system and its functions: organization, planning, accounting, control, analysis, coordination, regulation, etc. to implement the strategy of innovative development; forecast the development of the institution, organization, institution; solve the problem situation, etc.);

– implement research functions – master the management decision-making algorithm (identifying a problem, setting a task, finding ways to solve a problem, etc.);

– establish direct control over the process of assimilation of educational material.

The author's experience allows us to talk about the use of a whole complex of active methods of organizing the educational process, including business, role-playing and didactic games.

Active methods of organizing the educational process during the assimilation of new knowledge, techniques, methods of work significantly reduce the pressure of stereotypes formed in the

professional sphere, since new techniques do not compete with old ones, but are included in other conditions and when solving other tasks [24, 35].

With the help of active methods of organizing the educational process, the barriers of communication and perception of the participants (age, gender, etc.) are overcome. An important role is played by the motivation and mood of the learner, as well as the organization of the educational process.

The use of active methods in the organization of corporate training determines the expenditure of additional efforts by the manager (institution, organization, institution) to solve management tasks and develop a strategy. If this does not happen, then it "slips" to the repeated traditional path.

Among the modern management models and technologies that allow creating a management team receptive to innovations and achieving a stable positive result, Anna Peretiatko singles out the following:

– model of decision-making in conditions of uncertainty – sequence of actions of members of the management team: from information analysis; on the development of criteria for comparing alternatives; from the selection of the optimal decision option;

– mechanisms for the formation of managerial will – practical methods aimed at filling the "will deficit" of the head of an institution, institution, organization, the application of which allows you to manage their development;

– responsibility distribution matrix and process-job matrix – an approach to the structuring of functions and job duties, which is aimed at the optimal distribution of responsibilities between managers and specialists and promotes the concentration of attention on the results of the activities of the institution, institution, organization to meet the needs of the end user of goods and services;

– the algorithm for creating a management system – a sequence of steps for creating a system order regarding the management functions of an institution, institution, organization;

– project and program portfolio management – a strategic project management tool that allows timely management decisions regarding the initiation, suspension or closure of projects and programs;

– method of scenarios for implementing changes – a method of planning and organizing events that allows you to quickly implement changes in the activities of an educational institution, avoiding the loss of resources and time, and others [41].

It is important to master the methods of collective search for ideas. Among such methods are: brainstorming, brainwriting, metaplan, or moderating method, collective notebook method, CNB-method, method 635. These methods are characterized by the fact that during a conversation/meeting or discussion, the participants within a clearly defined time, they present their ideas or even just concepts and words according to the given topic. After that, an analysis and analysis of all expressed ideas and decisions is made.

Wide use of various methods of group dynamics, collective search for ideas allows members of the management team, the organization as a whole, to develop tolerance, respect for the opinions of colleagues, the ability to listen and hear and achieve a synergistic effect, when the overall result

significantly exceeds the achievements of team members using traditional methods (working meetings, meetings of methodological commissions, etc.).

That is why traditional business trainings aimed at any audience are dying out. Coaching learning technologies are taking their place. With the help of individual and group coaching, you can quickly identify the need, moderate the finding of their solutions. Individually created training programs for the requests identified in this way are becoming more and more widespread. Business trainings of a new generation, business sessions, master classes, created specifically for the problems and requests of employees.

We will give several examples of the transformation of outdated training methods into new forms of work with personnel:

Example 1. The technology of using metaphorical associative coaching cards, which allows you to quickly teach applied coaching. This technology is applied in nature, in contrast to traditional coaching with its fuzzy psychotherapeutic reflections.

Example 2. Team building trainings should go into the field of group coaching, into a team style of management, which involves a clear step-by-step implementation. The formation of the team should be measurable according to the identified criteria. And such a test that changes the level of team development has already been created. It is called "Assessment of the potential of the team" and is carried out at the initial stage of working with the team and after interventions for its development. It gives the business real performance indicators, simplifies the process of building teams and makes it technologically understandable. Today, team building trainings are focused on the organization of corporate holidays, which are emotional, but technologically blurred, and their results cannot be transferred to business.

Example 3. Corporate trainings should be transformed into a workshop on finding better ways to solve business issues. For example, creative workers should be united in creative teams, which will aim to find better experience in solving problems in the professional field.

That is, corporate training should become accessible and technological. Training should simplify and reduce the risks of employees in the implementation of difficult tasks and the achievement of ambitious goals of the company, institution, organization. Employees acquire skills at the workplace, in the mode of communication with managers. Corporate trainings, trainings for managers should not replace the work of managers with employees. They should supplement it in those areas where employees cannot receive ready-made solutions directly from the manager, for any reason. Such corporate training, in our opinion, is valuable not only for employees, but also for managers. Thus, the trends of modern corporate training on the development of receptivity to the new are closely related to innovative processes, business development trends.

Comprehensively, all the above-mentioned means of development of receptivity to the new are applied in the innovative business game. An innovative business game is a kind of system of reproduction of management processes that took place in the past, are happening now and are possible in the future.

Understanding the importance of an innovative business game in the development of receptivity to the new is difficult to overestimate. It is necessary to understand this method as an

implementation of the dialogic principle in corporate training. The game simulates one or another aspect of professional activity, activity of an organization, company, or institution. Game participants are given roles that determine the difference in their professional interests and incentives. Game actions are regulated by a system of rules.

In the business game, the spatio-temporal characteristics of the simulated activity are transformed. The game is conditional.

The contour of the regulation of the game consists of the following blocks:

– conceptual;
– scenario;
– production;
– stage;
– block of criticism and reflection;
– referee;
– block of providing information.

The qualification of the innovative business game is carried out according to the simulated object – there is a general management and functional game (simulation of production, management, financial activities).

The goals of the game are consistent with the practical needs of its participants. The organization of an innovative business game removes the contradiction between the abstract nature of the game process and the real nature of professional activity. The method allows you to combine a wide coverage of problems and the depth of their understanding.

The game form corresponds to the logic of activity, includes a moment of social interaction, prepares for professional communication; promotes greater involvement of participants in the problems of the institution, organization, company, institution in the conditions of innovative changes; in the game, professional attitudes are formed, stereotypes are easily overcome, and self-esteem is adjusted.

In combination with the dominance of the intellectual sphere, the personality of the participants is manifested in the business game. The business innovation game provokes the inclusion of reflexive processes, provides an opportunity to interpret and understand the obtained results, contributes to the formation of internal motivation for innovative changes and the achievement of successful results in reality. During the construction of the game, the organization of the joint activity of the players, which has the character of role-based interaction in accordance with the rules and norms, is assumed.

Achieving the goal occurs by making group and individual decisions [26].

The content can be a phenomenon to which there are many approaches (theoretical and practical), due to different semantic positions of the participants. The fabric of the event should represent a constant clash of interests of the game participants. The game is built as a hidden dialogue of meanings.

The situation should imply the ambiguity of decisions, contain an element of uncertainty, which ensures the problematic nature of the game and the personal expression of the players. Direct

formulation of the problem or pointing to it is inadmissible. At the same time, rules and norms are formulated unambiguously and unconditionally.

In the context of the game, there are opportunities for each player to make a decision and ensure that the participants are aware of it. To implement the procedure of the innovative business game, a package of documents containing the rules of the game and instructions for using certain management tools to implement the procedure, as well as forms and forms of the proposed technologies, is being developed:

Stage 1. Brain storm.

Stage 2. Analysis of the external environment (STEP-analysis).

Stage 3. Internal environment analysis (SWOT-analysis).

Stage 4. Summary analysis of the organization's environment (SPACE-analysis).

Stage 5. Building a problem tree (Future technology search).

Stage 6. Algorithm for developing an innovative project based on a selected issue for teamwork.

Informational material on the issues of the business game, features of the external and internal environment of the institution, organization, company, institution, as well as statistical material is offered. To facilitate the development and conduct of the game, as well as the learning of the rules by the participants, despite the conditions of teamwork, it is desirable to focus each package of documents on a specific player.

The game should reflect the most significant factors of the educational institution's work, well-thought-out incentives to ensure the involvement of participants. The game procedure provides for repeated feedback after each stage with the performance of the team members. It reproduces the development of the system as a result of the decision made and clearly differentiates the participants.

The game has a clear sequence of actions, is dramatized by the creation of a certain tension and the problem of the effective existence of the organization in the external environment in the conditions of external competition.

5.5 MEANS OF COLLECTING PROPOSALS FROM EMPLOYEES IN THE IDEA MANAGEMENT SYSTEM

The key resources of any organization are employees and their competencies – those that are used according to functional tasks, and those that are hidden, not actualized. Functional and potential knowledge, abilities and skills are assets that must be systematically managed to increase the effectiveness of the organization's development. Today, the greatest achievements in the development of organizations, institutions, and institutions are associated not with technological, but rather with organizational and management innovations, as evidenced by such new paradigms as "open innovation" and "global sourcing" (sourcing). In particular, the paradigm of "open innovation" allows to attract unique intra-organizational knowledge and experience and combine it with external information to the advantage of each individual institution, as this will reduce the time to implement a large number of innovations.

The opinion of K. Rosenfeld and J. Servo – consultants on innovation management of the Kodak company (1984) is quite well-known that the failure of large corporations to use innovative ideas is mainly due to the lack of an internal communication system, rather than to a decline in the ingenuity of employees. A tool that, in our opinion, is not used today for the development of organizations, institutions, and institutions is the idea management system.

Features of "intellectual management" are revealed by A. Eremin; stages of the idea management process – N. Sushko, D. Homutskiy; R. Dolzhenko, K. Ozerov, A. Sadriev, N. Sas, Y. Smirnov reveal separate means of collecting ideas in the organization, the experience of their use. The issue of means of collecting proposals from employees in the idea management system is of interest.

According to the theory of intellectual systems, A. Eremin proposes to introduce the concept of "intellectual management" (management of the macro-society and its subsystems: nano-, micro-, millisocieties), the features of which are the realization of characteristics and functions characteristic of intellectual systems (autonomy, fractality, hierarchy, dissipativeness, heredity and memory, coherence, bipolar asymmetry, synergy). The defining feature of the intellectual approach, in contrast to the systemic and situational approach, is the consideration of features characteristic only for intellectual systems – "intellectual reflection" and "informational instinct", which form the dominant intellectual systems with their objective advantage – a better ability to adapt to the environment, due to the property of active reflection of objective reality. The goals of a person, nano-, micro-, millisocieties can contribute to the formation of a strategy of behavior and management [45].

The idea management system, according to N. Sushko, consists of the following stages: collection of ideas; rating; refinement; implementation [48].

D. Homutskiy imagines the process of managing ideas as follows:

– the birth of an idea;
– formation of the primary pool;
– development and enrichment of the idea;
– management assessment;
– selection of business ideas that have practical value for a specific organization [49].

In our opinion, the full cycle of idea management looks like this:

– the birth of an idea;
– formation of the primary pool;
– development and enrichment of the idea;
– management assessment;
– selection of business ideas that have practical value for a specific organization;
– refinement;
– implementation.

It is clear that each stage, in turn, can be decomposed and instrumented according to the specifics of the organization, institution, institution.

The main thing that the system of receiving and evaluating ideas will give to the organization, institution, institution is directly the proposals themselves. The ideas of employees to improve the

work of the organization, institution, institution will allow to improve technological and marketing processes, and introduce innovations. In addition, working with ideas is important for employee motivation (employees understand that management listens to their opinion; a system of possible bonuses for authors of supported ideas will stimulate employee creativity).

In our opinion, the conditions for the success of the idea management system are as follows:

– mutual recognition of the capabilities and contributions of each employee;

– free expression of one's own opinion by each employee without fear of being punished, exchange of ideas without obstacles within the organization (between top leaders, managers, employees);

– use of various communication systems for informal communication (constant meetings, exchange of messages, thoughts, considerations);

– management of ideas is clearly managed, but not programmed, it arises on the basis of a common interest or a topic that unites people and determines their desire to actively contribute to their development.

In any idea management system, the means of their collection are important. The most used are the "box for ideas and suggestions"; kaizen – proposals; automated means. In the pre-digital era, suggestions were collected using an "idea and suggestion box" in which the author placed an idea laid out on paper. Such boxes were located in each division (department or workshop) of the enterprise.

Using the box of ideas as a means of collecting them revealed the following limitations (the very principle of such a system is not transparent):

– the author cannot follow the full cycle of consideration of an idea (ideas can be lost or stolen, it is difficult to analyze their flow, it is difficult to give feedback to the authors);

– the effectiveness of the procedures for selection and examination of employee proposals began to decrease more and more due to the increasing complexity of ensuring objectivity and competence in their implementation;

– the proposal box was deprived of the possibility of public discussion of ideas by the entire company team and their prompt implementation by individual interested employees;

– the lack of information about the results of the assessment and the implementation of the proposed proposals affected the motivation of the authors' further creative activity.

In the system of kaizen proposals, the main emphasis is not on individual creativity, but on collective work within the framework of continuous improvement teams (so-called "quality circles", which unite employees of individual units in informal groups). The disadvantage of such a means of gathering ideas and suggestions is the difficulty of using them for the development of major product innovations. However, this shortcoming is overcome in the process of creating special venture teams and idea incubators, whose professional participants are clearly focused on the search for promising, first of all, breakthrough ideas in the organization, their implementation as soon as possible and the promotion of the obtained results to the market [49].

The growing complexity of managing ideas in companies led to the emergence and wide distribution of special software products [50]. All the variety of these software products can be divided into four main groups.

The first group unites programs of centralized automated systems such as: "exchange of ideas", "single window of innovations", "information incubator of innovative ideas". It allows all employees to register as acquirers, independent experts, submit proposals without sending a package of documents on paper, send proposals for examination, monitor the current state of the proposal [51]. The specificity of these programs, which consists in the fact that their use is carried out in the mode of remote access, during which the user, without physically owning the program, can implement only its functionality, refers these programs to the number of so-called "Cloud Services".

The second group combines programs based on the use of the social rating method, which involves public discussion of submitted proposals, their evaluation and ranking depending on the results of the voting. The capabilities of the programs of this group allow you to single out the most important and interesting ideas and, giving them the appropriate rating, make their implementation a higher priority.

The third group of programs is based on the selection of ideas with the help of trading on the so-called prediction markets, designed to create forecasts of various topics and obtain information based on them about, for example, changes in consumer values and market expectations. The general ideology of building software that works with prediction markets is to develop a resource with the help of which participants' bets are accepted regarding the occurrence of this or that event [45].

The fourth group of programs work as innovative platforms that provide their users with access to functions for organizing brainstorming, holding meetings, meetings of closed groups, access to various databases, etc.

Important, in our opinion, is N. Sushko's conclusion that when using a business process management system (in which the management of ideas itself becomes one of the company's business processes), a separate product for managing ideas becomes unnecessary. Any employee can easily offer something. The initiator simply submits an application, it automatically goes to the manager or employee responsible for analyzing ideas. At the stage of collection, the idea can also be clarified if some nuances are unclear [48].

Information systems for idea management – software products that allow employees to make suggestions and management to systematically receive and work with them – are much easier to use. However, they are not without limiting characteristics. In particular, not all employees have access to a computer; not everyone has electronic programs for creating drawings or diagrams with detailed explanations. This requires additional training of personnel [50].

The analysis of the experience of using the considered means of collecting ideas made it possible to identify a number of factors that prevent the active involvement of employees in the innovation process (regardless of the means of collecting ideas).

They include:

– low awareness of employees;
– complex application submission and processing procedure;
– a long period of consideration of applications;
– lack of access to professional consultations;
– fear of refusal to consider applications, fear of criticism;

– low involvement of business units at the stage of selection and evaluation of offers;
– insufficient motivation of employees to implement innovations;
– insufficient level of innovative culture at the enterprise, organization, institution;
– lack of an effective control mechanism for the implementation of proposals;
– difficulties in assessing the economic effect of innovations.

CONCLUSIONS

Thus, the authors substantiated the relevance of the given topic, defined the concept of the phenomenon of *receptivity to the new* as the ability of an individual to perceive the signs of the new (future) and to be guided by the formed idea (consciously or unconsciously) in its practical activity; as the degree of relative advance by the individual of other members of its social system in the perception of new ideas, phenomena, discoveries that will determine the future.

The classification features were singled out and the author's classification of receptivity to the new was concluded. The divisive (generic) concepts of the classification of the definition of *receptivity to the new* are defined as follows:

– form of knowledge of reality;
– leading aspects of the perceived object;
– dominant feelings;
– field of activity;
– components of the subject's experience;
– cognitive-emotional processes;
– environment of selected information;
– hierarchical level of the management entity.

The following features of a personality receptive to the new are presented:

– an active attitude to the future, "attraction of the future factor";
– a critical attitude to the past, which "takes" with it everything that contributes to the exit from the crisis, further development;
– flexibility and mobility, readiness to take risks;
– ability to self-organize;
– ability to change in response to external challenges.

Individual and group receptivity to the new and means of their development are characterized; creation of an internal organizational climate stimulating the development of receptivity to the new.

We see a perspective in further clarification of classification features, characteristics of typologies of receptivity to the new, research of factors that promote or inhibit the development of receptivity to the new. Among the promising tasks are the research of issues related to the development of receptivity to the new, the development of diagnostic tools and conducting experimental work.

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TAKING INTO ACCOUNT THE CULTURAL CONTEXT AS AN IMPORTANT CONDITION FOR THE SUCCESSFUL IMPLEMENTATION OF SOCIAL AND EMOTIONAL TRAINING PROGRAMS IN UKRAINE

ABSTRACT

The section deals with the issues of influence of cultural context on the implementation of international programs of social and emotional learning in the Ukrainian education system. The importance of adaptation of such programs to national cultural features in order to achieve the effectiveness of their application in the educational environment is emphasized. On the basis of the model of cultural measurements, G. Hofstede conducted an analysis of the Ukrainian cultural context. Particular attention is paid to the coverage of cultural traditions of Ukraine, such as corcentrism, collectivism, fostering spirituality, striving for freedom, formed under the influence of historical, religious and socio-economic conditions. It is determined that the cultural context of Ukraine is potentially favorable for the implementation of social and emotional training programs, since such programs emphasize the development of empathy, cooperation and other social and emotional skills, in accordance with the cultural priorities of Ukrainian society.

Empirical research using both primary and secondary data included a comparative analysis of international practices, case studies of the implementation of the program of social-emotional and ethical training (SEET) in Ukraine and a survey "Cultural context of the SEET program in Ukraine" 43 teachers from 24 educational institutions implementing the SEET program for 5 years, on the ways of adaptation of the program to the Ukrainian cultural environment.

The study showed that adaptation of social and emotional learning programs to specific cultural features of Ukraine contributes to their effective implementation, increases the level of involvement of apprenticeship and the parent community in the educational process and contributes to the development of socio-emotional skills of discipleship. On the basis of the results obtained, recommendations were given to educators, scientists and practitioners to take into account the cultural context in the implementation of social and emotional training programs.

KEYWORDS

Socio-emotional learning, cultural context, Hofstede model, adaptation of educational programs, socio-emotional skills, Ukrainian culture, socio-emotional and ethical training, national values.

The diversity of cultures that exist on the planet is determined by many factors, including natural conditions of residence, historical development of peoples, religious beliefs, etc. Culture is the most important factor of socialization, a significant stage of which takes place in social institutions, first of all, in the education system, and which regulates relations in society. It is obvious that the cultural context has a significant impact on the functioning of the education system in a particular country. For the research community, it is important to understand how a specific cultural context can affect the implementation of some of the latest educational programs, for example, social and emotional learning programs (SET), which are now becoming a trend of educational policies of states.

The study of cultural characteristics and the search for ways to adapt these predominantly international programs to the cultural context of countries are necessary for several important reasons. Thus, the SEET programs are mainly created and moved by individual interested communities and are a priority of countries with a high standard of living [1], and therefore there is a need to adapt them to the cultural contexts of those countries where other socio-economic conditions operate and an excellent educational system operates. that they were organically perceived and successfully implemented in other socio-economic conditions and excellent educational system.

In addition, each culture has its own social norms, values and expectations regarding the behavior of people, certain standards of upbringing. SEET programs, adapted to the cultural context, help students develop skills (so-called soft skills or socio-emotional) that meet these standards and expectations, which contributes to the better social integration of such programs in line with social and cultural requirements. Similarly, different cultures have their own specific ways of perceiving and expressing emotions. For example, what is considered a normal emotional response in one culture may not be acceptable in another. The accommodation of SEET programs allows to take into account these features and to provide greater clarity and efficiency of training.

Taking into account cultural characteristics demonstrates respect for the cultural diversity of countries where one or another SEET program is implemented or can be implemented, ensures development in discipleship of intercultural competence, which is important in the context of globalization. Thanks to the implementation of SEET programs in different countries of the world, prerequisites for a safe inclusive educational environment are created, which promotes mutual respect for cultural differences, tolerance and successful cooperation between participants and participants of the educational process.

Moreover, the adaptation of SEET to the cultural context of countries and the study of this context are key for countries to create their effective, inclusive and relevant SEET educational programs that meet the needs of modern societies.

Taking into account the relevance of the raised issue of meta-research, it is necessary to consider the influence of the cultural context for the effective implementation of social and emotional training programs among Ukrainian apprenticeship, teaching and providing recommendations for the successful adaptation of such programs in Ukraine (on the example of the program of social-emotional and ethical training – SEET).

Tasks:

1. Analyze the classification of societies in the context of common values for different countries.

2. Research of Ukrainian ethos and peculiarities of Ukrainian ethos in comparison with other European countries.

3. To clarify what are the main values of the Ukrainian cultural context in the aspect of the development of socio-emotional skills of discipleship and what components of this context can be developed with the help of programmatic and emotional learning (on the example of the SEET program), as well as what components of the program do not find a response in the Ukrainian cultural context.

4. To determine the main directions of adaptation of programs of social and emotional training to the Ukrainian cultural context.

Methods of research: *theoretical analysis* – a systematic review of literature and scientific sources, in particular classifications of cultural differences, which allows you to understand the cultural characteristics of different societies, *the analysis of* the concept of the New Ukrainian School, professional standards of teaching and school leaders; *empirical research* – study of specific examples and influences of cultural features on the adoption and adaptation of SEET programs in Ukraine, using both primary and secondary data for analysis; *comparative analysis* – comparison of the practice of implementing social and emotional programs in other countries with Ukrainian experience to identify potential problems and opportunities for adaptation; *case studies* – in-depth study of the implementation of the SEET program in Ukraine, including analysis of the impact of cultural features on the success of these programs; *survey* on the issue of the coincidence of Ukrainian cultural accents and the main concepts of the SEET program "Cultural context of the SEET program in Ukraine".

In general, the applied methods allow to approach the problem of taking into account the cultural context in the implementation of educational programs in a comprehensive way, providing not only a theoretical justification for the need to adapt programs of social and emotional learning, but also provide practical recommendations for organizations involved in the development and implementation of such programs.

6.1 ANALYTICAL REVIEW AND SUBSTANTIATION OF THEORETICAL FOUNDATIONS OF RESEARCH

Analyzing the problem, we turned to various studies in the range of issues of studying and modeling cultural differences in a globalized world in order to find a reliable theoretical basis, the so-called "starting points", the study of the cultural context for the effective implementation of SEET programs in the education system of Ukraine.

In this context, it is important to mention that the problem of organization and identification of cultures was handled by American scientists A. Kroeber and C. Kluckhohn [2], who argued that there should be universal categories of culture Hall presented the results of his research in the book "beyond Culture" [3]. The cultural dimensions of F. Trompenaars and C. Hampden-Turner,

published in "*Riding the waves of culture: Understanding diversity in global business*» [4]. The researchers added to the main cultural parameters, control parameters and time perspective and created their own model for studying the values of national cultures.

The creation of cultural models in the modern conditions of increasing globalization is a long-term research trend. For example, the World values Survey (WVS) was initiated by R. Inglehart, a professor at the University of Michigan (USA) in 1981 and is a long-standing comparative study [5]. The survey was initiated on the basis of the European values study and over time has become one of the most authoritative and widely used international studies covering almost 120 countries and societies, accounting for about 95 % of the world population [6]. Ukraine joined the World values Survey in 1999 during the fourth wave of the study, and participated in the fifth (2006) and sixth (2011) waves. The last study with the participation of Ukraine took place in 2020. In addition, in Ukraine, studies were conducted within the framework of the European value Research in 1996, 2008. The World values Survey allows to obtain data on the main features and values of individual societies and countries, track the dynamics of changes in social development and make a comparative analysis of different societies by different thematic blocks and indicators. The main goal of the project is to assess the impact of stability or change of values on the social, political and economic development of countries and societies [7].

R. Inglehart's exploration, as well as the vast majority of other studies of the cultures of the authors and authors mentioned above, concerns business, although more and more research, including domestic ones, has recently appeared on the impact of cultural contexts of different countries on the education system. Researchers and researchers study the system of communication in the system "teacher – student", compare the features of educational programs of different countries in the plane of their cultures, changes in educational systems in view of democratic reforms in the country, etc.

Ukrainian scientists/-people actively explore the influence of cultural context on the education system and development society through various pedagogical and socio-cultural approaches related to prominent figures in science. Thus, V. Andrushchenko, developing the philosophy of education, focuses on the cultural context of personality formation. It views education as a process of cultural transformation, where education is based on the integration of national traditions and global innovation. His conception of life-creation emphasizes the role of personal subjectivity in building his own life path through the conquest of cultural values. An important aspect is the humanization of education, aimed at the formation of moral responsibility, critical thinking and social activity in the context of globalization and democracy [8].

I. Zazyun made a decisive contribution to the development of humanistic and cultural aspects of pedagogy, emphasizing the role of spirituality and moral values based on national culture. His concepts relate to the modernization of pedagogical education, in particular the professional training of teaching and the formation of a personality-oriented pedagogical outlook, which contributes to the development of the individual and society through education and education based on cultural traditions and democracy [9].

I. Beh greatly influenced the study of the cultural context in education, paying attention to the spiritual and moral development of the individual. He developed the concept of education, which ensures the formation of value orientations through the cultural and moral norms of society [10]. In line with this approach, K. Giurba explores the upbringing of semantic values as one of the priority areas of discipleship education [11].

It is important to note that a separate group consists of scientific intelligence, while mostly foreign, focused on the study of the influence of ethnic and social features on the study of certain educational programs, especially popular today in the world of SEET programs. Researchers from New Zealand M. Webber and S. Waru-Benson (2022) have characterized the impact of cultural stereotypes and belonging to the ethnic group on social and emotional well-being. Studies have shown that the perception of one's ethnic identity can either promote or undermine social and emotional well-being depending on whether the content of that identity is positive or negative. When there is a positive cultural stereotype, for example, a stereotype about the academic abilities of persons of Asian origin, the allocation of membership in the group has a positive effect on academic success and socio-emotional well-being [12].

We would like to emphasize that by studying the problems of the influence of the cultural context on educational systems, researchers and researchers from different countries, including Ukraine, often take as a basis the model of national culture of G. Hofstede [13], which is one of the most famous and influential models of modernity in the field of intercultural studies.

The created G. Hofstede model has undoubted advantages, including in the direction of our research activities, but it is also subjected to certain criticism. Let us consider these aspects in more detail, positioning this model as a potential methodological approach, according to which we will consider the peculiarities of implementation of SEET programs in Ukraine through the prism of the cultural context of the country.

As the advantages of the model, we will determine its consistency and structure. After all, G. Hofstede's research was one of the first and most successful attempts to consistently study cultural differences. The author laid the foundations of a holistic research tradition, studying social differences, the so-called "comparative culturology" – an interdisciplinary field, whose roots and influence cover sociology, anthropology, political science, economics, management research, psychology and other fields [14].

The main advantage of the author's approach is the "unpacking of culture" (the proposal to divide this complex phenomenon into separate components and study discretely [15, 16]. Ukrainian scientist O. Pryshlyak emphasizes that "the theory of G. Hofstede researchers consider the most famous and popular, which is explained by a well-found set of universal parameters suitable for the analysis of cultures, regardless of what country they relate to or in what cultural context they operate" [17, 18–20]. This confirms its value and effectiveness for modern tasks, including the study of the cultural context of the implementation of SEET programs in Ukraine.

Hofstede's approach laid the foundation for further studies of the cultural context and is actively used in various fields, from business and human resource management to education, allowing

the integration of cultural aspects into various fields of activity. This confirms the practical value and versatility of the research approach. Hofstede's cultural dimensions help us to understand more deeply how cultural values affect people's behavior, expectations, and interactions. This is key to developing and adapting SEET programs that take into account national cultural characteristics.

In the scientific discourse there is a certain criticism of G. Hofstede's model. They emphasize the obsolescence of the data case, of which a large array was actually collected by the author in the 1970–1980s. During this time, cultural accents could shift, because the modern world has undergone significant changes. This, according to critics and critics, can make the model less relevant for modern research due to the lack of consideration of modern contexts, such as the world pandemic or war in Ukraine.

Some opponents (A. Amundsson, 2005; R. Goodstein, 1981; W. Hunt, 1981; J. Robinson, 1983; D. Baskervill-Morley, 2003, 2005; G. Holden, 2002; S. McSweeney, 2002) believe that the Hofstede model can simplify or stereotyped cultures without taking into account the internal diversity and composition of each nation. Also note the limited number of dimensions. A limited number of cultural dimensions may not cover all aspects of cultural differences, which may lead to an insufficient understanding of the cultural context.

In addition, the Hofstede model focuses only on the national level, not taking into account regional differences, subcultures and even corporate cultures, which can be important for understanding the cultural contexts of some multi-layered processes, such as implementing SEET programs at the community level.

Despite criticism, in research circles, the model is considered relevant and for many years is used to characterize many cultures, providing the validity of general conclusions about cultural trends.

It is important to note that after initial investigations in the 1970s and 1980s, the research base was repeatedly updated and supplemented with fresh data. Today, the model is based on a large amount of data collected from around the world, which makes it reliable and reliable for analyzing various cultural contexts. Moreover, the model itself is undergoing constant modernization, which allows to take into account changes in cultural values.

For example, in 2010, two new dimensions appeared in the model:

1) long-term/short-term orientation;

2) assumptions or things that express life satisfaction. These measurements were added by the author of the model in cooperation with other independent researchers of the cultural context of M. Bond and M. Minkov and provided a clearer reflection of cultural features in the modern form.

Although, despite the rapid changes in the modern world, the main cultural trends continue to remain relatively stable for a long time. Some aspects of the culture have deep roots and do not change quickly, which allows you to use G. Hofstede's basic results to understand long-term trends.

It is also worth noting that the studies that appeared later (R. Inggart, S. Schwartz, M. Bond, C. Welzel, M. Minkov and other authors) often confirm and creatively develop the main conclusions

of G. Hofstede. This indicates that its model remains relevant and relevant due to its updating, stability of the main cultural trends, confirmation of further research and wide practical application in various fields.

Based on the theory of cultural dimensions G. Hofstede, domestic researchers and researchers (O. Pryshlyak [17], I. Erastova-Mikhalus [18], D. Voronina-Prigodiy [19], I. Medvedev [20], O. Shestakovsky [21] and others) study the influence of cultural differences on communication, educational processes and business practices in Ukraine, which contributes to the best cultural educational adaptation, managerial strategies and international management strategies. development of international cooperation and the formation of a tolerant society.

A significant number of modern studies of foreign authors and authors indicates a great interest in clarifying the issue of the impact of the cultural context on the education system in different countries using the G. Hofstede model. G. Hofstede himself emphasized the importance of the cultural context in building the educational process: "Societal, national and gender cultures, which children acquire from their earliest youth onwards, are much deeper rooted in the human mind than occupational cultures acquired at school, or than organizational cultures acquired on the job. The latter are exchangeable when people take a new job. Societal cultures reside in (often unconscious) values, in the SET of broad tendencies to prefer certain states of affairs over others" [3, 13].

For example, Polish researchers A. Popyk, A. Perkowska-Klejman are exploring how national educational programs in Republic of Poland and Ukraine define educational processes and relations between the teacher and the pupil depending on cultural contexts. This study, based on the Hofstede model, shows that both countries have significant cultural differences that affect educational processes. For example, Polish culture is more inclined towards individualism and masculinity, while Ukrainian culture is more collectivistic and feminine. However, both countries demonstrate a high distance of power and avoidance of uncertainty [22].

A. Alqarni explores the impact of cultural aspects on discipleship behavior and learning styles in various educational environments. Using Hofstede's model of cultural dimensions, the author analyzes how these dimensions affect the learning process in different cultural and linguistic contexts. For example, in countries with a high distance of power, the relationship between apprenticeship and teaching is more formal, affecting student initiatives and their ability to independent thinking. In countries with a small distance of power, on the contrary, there is greater spontaneity and interaction between apprenticeship and teaching. The article examines examples from countries such as the United States, Korea, China, India, Australia, Japan, and some European countries, which makes it possible to draw conclusions about the impact of cultural differences on learning in different parts of the world [23].

I. Morera and C. Galvánexploring the impact of educational culture on the learning process using Hofstede's model of cultural dimensions as an analytical tool. The authors conduct a diachronic study of the development of educational culture in Romania over the past 60 years, covering the communist period, the period of reforms after the fall of the regime and the introduction of democracy to the present [24].

We will clarify that further we plan to disclose the Ukrainian cultural context for the implementation of social and emotional training programs, on the example of the program of social, emotional and ethical training (SEET), which is now actively networking in Ukraine and has five years of experience of systematic experimental implementation at the all-Ukrainian level with the participation of the Institute for the modernization of the content of education of the Ministry of Education and Science of Ukraine, Institute of problems of Education of the National Academy of Pedagogical Sciences of Ukraine and with the support of Civil Peace Service Ukraine [25]. This program is one of the world's widespread programs of social and emotional learning created at Emory University (USA) and implemented in 144 countries of the world (including in 24 at the system level, in particular, in Ukraine). And although the program was originally conceived as an international one, it is natural that it has certain cultural characteristics that may not be completely understandable for Ukrainian teaching and apprenticeship.

We believe that the use of the Hofstede model for analyzing the cultural context in the implementation of SEET programs in Ukraine, on the example of this specific program, will positively affect The development of A holistic vision of the process of adapting SEET teaching methods to Ukrainian cultural characteristics, making them more effective and acceptable for Ukrainian teaching and apprenticeship. Also, the view on the implementation of SEET through the prism of the Hofstede model will contribute to a better understanding of the relevant cultural characteristics of countries for the correct choice of strategies for the implementation of international programs in the national education system, which will help to establish more effective interaction between apprenticeship, teaching and fatherhood.

In the course of the research search, we take into account that when using the G. Hofstede model in the modern educational space, it is important to take into account its limitations and constantly update knowledge about cultural changes, adapting it to specific tasks and conditions through additional local studies to clarify relevant data. For example, in the case of social and emotional training programs in Ukraine, we use the G. Hofstede model as a base, complementing it with modern data, conducting additional research among Ukrainian teachers to ensure its relevance.

6.2 ANALYSIS OF CLASSIFICATIONS OF SOCIETIES ON VALUE ORIENTATIONS IN DIFFERENT GROUPS OF COUNTRIES (ACCORDING TO G. HOFSTEDE)

Exploring the problem of taking into account the impact of the cultural context for the effective implementation of social and emotional learning programs, it is important to look at Ukrainian culture from the point of view of the general study of world cultures and their characteristics, focusing on the exploration of the cultural context carried out by a group of researchers led by G. Hofstede [13]. The cultural classification developed by them is focused on certain cultural features that we will consider for a better understanding in the perspective of this study. We will try to establish the peculiarities of cultures and, above all, to explore the peculiarities of Ukrainian

culture and the impact of these features on the process of socialization and how the revealed cultural context can influence the perception of the value of education by Ukrainian students, ideas about its importance in the future life, acquiring the necessary skills, including socio-emotional.

Consider generalizations that are presented in the above study and focus on the values of measurements / indices (dimensions), which are visualized on the site Culture factor Group [26] (**Fig. 6.1**). The dimensions are understood to mean certain characteristics that are used to analyze complex objects, such as the characteristics of the culture of society [27]. Minkov and other scholars regard cultural dimensions as conditional research structures at group level, designed to better understand and explain national (and other group) differences [14].

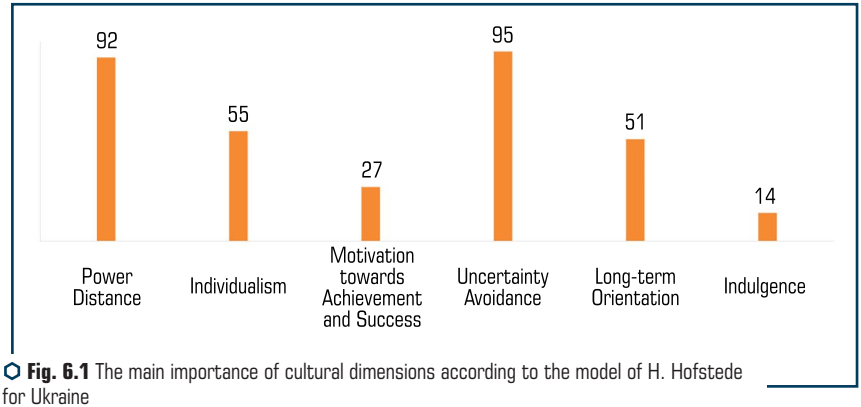

Fig. 6.1 The main importance of cultural dimensions according to the model of H. Hofstede for Ukraine

Source: [26]

First of all, consider the value of measuring the distance of power. The dimension defines the characteristic perception of power as the most important part of life and the large or small distancing from power. The high distance of power means that people are more accustomed to hierarchical structures and accept power unevenly distributed. The low distance of power testifies to the desire for equality and democratic relations in society.

We see a significant difference in the world in the meaning of this index. In Ukraine, the value of this measurement is too high – 92 (the largest – 100) [26]. This means that the majority of the socialis almost completely detached from those who have real power, perceiving this part of society as its privileged but far from real life element. People do not feel relevant to decision-making in the country, and therefore do not consider it their duty to solve its problems and improve life in the country, placing responsibility on representatives of the authorities. Inequality and privilege are considered the norm of life, which is diametrically opposed to democratic values. In the democratic countries of Europe, this dimension is much lower.

It is obvious that the high distance from the authorities in some way correlates with the level of socio-economic development of the country, and its decline can contribute to such development. In the aspect of Ukraine's choice of a democratic path, the development of democratic institutions and individual civic activity, social trust and responsibility of each and every one, first of all through the implementation of relevant values and strategies in the education system, which is taking place today through the implementation of social and emotional training programs, especially the SEET program, it has an ethical component in its composition. We assume that the reform of the educational system and the introduction of SEET in Ukraine can become one of the factors that can reduce the distance of power through the development of social and emotional competence of the younger generation. However, the direct cause-and-effect relationship of SET with this cultural dimension still requires further systematic scientific justification.

The dimension of individualism (as opposed to cohesion) demonstrates the level of attraction to one's own goals and the protection of one's interests. The highest values (up to 100) on this indicator demonstrate the importance of their own interests, the confidentiality of representatives and representatives of countries. In Ukraine, this figure is 55. This indicator shows approximately the average importance of personal goals and at the same time commitment to group interests. That is, in society, there is almost equally attraction to both personal goals and group goals. At present, during the war, obviously, the propensity for collective goals is growing, as the cohesion of society against a common enemy and the orientation toward achieving the main common socially significant goal – victory over the aggressor becomes very important. At the same time, the cultivation of their own individual priorities and goals can become an additional resource for maintaining the stability of citizens and citizens during the war. Moreover, in the future, with the development of a free independent democratic state, in which every person is a social value, it will be increasingly important to develop in discipleship the very understanding of the importance of personal goals and the desire for self-realization, in which the same will be auxiliary programs of social and emotional learning.

The next dimension of masculinity/feminity. In G. Hofstede's classification, this dimension means the focus on achieving results in any case, under any circumstances, rivalry, self-confidence, purposefulness, as opposed to respecting relationships and caring for the quality of life. It has different meanings in different countries. However, it is obvious that this dimension is not so intermodeled by the level of socio-economic development of the country. For example, in Sweden, this dimension is small, and in the United States it is high. Rather, it reflects the degree of rooting of certain ideas and values regarding the patterns of behavior in the culture of peoples. This dimension also affects the formation of social norms and expectations that may differ even among developed countries. Understanding these differences is important for intercultural communication and effective interaction in a globalized world.

In Ukraine, this dimension is 27, this indicator is low. This indicator of masculinity / femineity in Ukraine indicates that in culture, relationships, care for others, balance between work and personal life are valued. This may mean that cooperation and joint achievements are more important in Ukraine, not self-affirmation and rivalry. Ukrainian culture, focused on mutual understanding and

maintaining the quality of life, can contribute to greater social cohesion, but at the same time, less desire for certain achievements.

This creates favorable conditions for the implementation of SEET programs, since such programs often emphasize cooperation, empathy, including self-support, emotional support and development of skills to better understand their own capabilities and boundaries. These programs can further strengthen social connections and increase support among apprenticeships, contributing to a better social climate in schools.

SET can help overcome stereotypes and discriminatory practices by raising awareness of diversity and promoting greater empathy and understanding. A low level of masculinity, which indicates a lower propensity for rivalry and aggression, can contribute to more effective implementation of such programs.

Focusing on the quality of life and the balance between work and personal life inherent in Ukrainian culture can contribute to the adoption and support of SEET programs, which emphasize the importance of mental health and emotional well-being, by educators and the parent community.

The measurement of avoidance of uncertainties demonstrates the degree of perception and response to unfamiliar situations. In societies with high values of this dimension, there is a high propensity for sustainable solutions. They are clearly structured. Perhaps only the danger will require a different approach. In countries with a low rate of avoidance of uncertainty is characterized by a supportive attitude to the manifestations of their own initiative and, even, risky behavior in solving problems; high level of acceptance of possible differences, other points of view. It is obvious that in the modern world, where there are constantly problematic situations of uncertainty, which require rapid response, non-standard solutions, this dimension is very important. And we can assume that cultures where such behavior is cultivated will be successful, they are open to new innovative solutions. In Ukraine, the index of avoiding uncertainty is very high – 95, which indicates a high probability of people not being ready to solve the problems that arise. It is obvious that this component of culture must be developed, it should be directed to the efforts of the teachers who teach the program of SET.

Another dimension – long-term orientation – shows a focus on solving short-term or long-term problems. In cultures with high values of this index (Southeast and East Asia) there is stability, perseverance in achieving the goals, understanding the importance of education and accepting it as a necessary value. This is proved by the latest data of the international study of the quality of education Pisa-2022, which showed that countries such as Republic of Singapore, Republic of China, Republic of Korea, Hong Kong, Japan are in the first place [29].

In Ukraine, the value of this index is 51, which, with a maximum index of 100, is about half and is not low, but not high enough. For example, in some other countries with Soviet past, it is: in Georgia – 24, Republic of Armenia – 38, Republic of Belarus – 51, Republic of Latvia – 51, Republic of Moldova – 71, Republic of Kazakhstan – 85.

The 51 index indicates that Ukrainian culture tends to maintain a balance between short-term and long-term commitments. This indicates a willingness to invest in the future, such as education and development, but also shows a certain dependence on immediate results and achievements.

The Ukrainian culture has the potential to increase the level of long-term orientation through the implementation of policies and programs that stimulate long-term planning and perseverance in achieving goals. SET programs can help develop long-term thinking in young people, helping them to see the value of education, perseverance and planning for the future. SET is able to help develop in discipleship the skills necessary to overcome difficulties and achieve long-term goals, such as emotional resilience, self-regulation and motivation; contribute to the formation of values that support long-term orientation, such as patience, responsibility and result orientation. We believe that setting up and maintaining such a vision on strategic goals should help in wartime and postwar times in the restoration of Ukraine.

Measurement of assumption (indulgence), as noted by G. Hofstede, is a measure of happiness and measure of satisfaction with the joy of life. Societies with high assumptions, such as Kingdom of Sweden (78), Kingdom of Denmark (70), Kingdom of the Netherlands (68), Iceland (67), defined as being sufficiently free to satisfy basic human desires, to enjoy life. Societies that value life satisfaction are optimistic, encourage discussion and dialog in decision-making, coaching and mentoring, and emphasize a flexible balance between work and private life. Freedom of speech is important for these societies, they focus on personal happiness and do not take life too seriously. The level of indulgence in Ukraine is quite low – 14. That is, it can be argued that there is a tendency to pessimism, satisfaction with the usual joys of life is not appreciated enough. Low indicators of this dimension may indicate strict social norms and social control of meeting needs, which prevents people from enjoying life and expressing their emotions freely. In Ukraine, such social norms, often in the form of traditions or requirements for a person, can limit manifestations of joy, freedom of action and self-expression, which can affect the overall SET of happiness and well-being. SEET programs are able to play an important role in the development of appreciation of the well-being and joys of life in Ukraine. These programs are aimed at developing emotional literacy, which helps people to better understand and express their emotions and helps reduce the level of pessimism and increase the overall level of satisfaction with life. SET teaches self-regulation skills, promotes positive emotional background and the ability to enjoy life, even in difficult circumstances. This can help change societal norms and institutions, making them more forgiving to meet needs and express joy.

Thus, it is possible to draw interim conclusions from the study of G. Hofstede and his co-authors on Ukrainian culture. Ukrainian culture is characterized by high distancing from the authorities, its perception as something arrogant and distant, and a high propensity to make well-established decisions, which in our uncertain world is not productive. As for individual goals, it is important, first of all, to develop empathy for yourself, understanding your own goals and capabilities. Also of great importance is the satisfaction of their lives, the focus on their own well-being.

The implementation of social and emotional training programs in Ukraine can have a significant positive impact on culture, contributing to the reduction of distancing from the authorities, stimulating adaptability, developing self-perception and increasing the overall level of satisfaction with life.

6.3 CULTURAL CONTEXT OF EDUCATION DEVELOPMENT IN UKRAINE THROUGH THE CHALLENGES OF WAR, SOCIAL POLARIZATION AND THE PATH TO DEMOCRACY

The specific historical and cultural context of Ukraine definitely affects the development of the education system.

In order to better reveal the cultural context, it is necessary to pay attention to the peculiarities of the national spiritual values of the Ukrainian people, which are devoted to the scientific works of many researchers and researchers (V. Vasiutinsky, S. Krymsky, M. Boryshevsky, L. Mysiv, G. Sytnik, O. Stashevska, Yu. Surmin, etc.).

The culture of the Ukrainian people was formed under the influence of factors of a certain geographical environment (forest-steppe), which determined the living conditions and associated economic traditions. For the Ukrainian people is important as the main type of economic activity – agriculture, and therefore a special attitude to land and nature. For a long time, the life of the Ukrainian peasantry was determined by the calendar of agricultural works on land. "In Ukraine, the symbolism of culture and communication with nature was brought by G. Skovoroda to the idea of a third world…", that is, the "temple" and the shrine. In general, the Ukrainian national culture has a parallelism of the image of the life of nature and man, the organic connection of natural and social. The steppe for Ukrainians is not just a geographical or ecological phenomenon, but a social ground [29].

Under the influence of specific natural and cultural circumstances, not only common values inherent in all cultures were formed, but a unique specific hierarchy of values, among which basic values were noted, which became the basis of the national and cultural ideal and contributed to the formation of a unique national identity based on respect for nature, collectivism and spirituality. Thus, one of the basic values of Ukrainian culture is a large number of researchers and researchers in the field of philosophy and cultural studies (O. Stasevska, V. Khramova, I. Bychko, A. Bychko, Yu. Rymarenko, V. Tabachkovsky, S. Krymsky, etc.) is consideredcorcentrism. It is a term derived from the Latin word "Cor" (heart), used to describe a cultural identity that focuses on emotion, sensuality, and intuition. Kordocentrianism is defined in domestic studies as the advantage of sensual and existential over rational, expressing the dominant "heart" [30].

For the worldview-value consciousness of Ukrainian culture, it becomes characteristic of the foreground not of the formalism of the mind, but of what is the root of moral life, of the "heart" as metaphors of the intimate depths of the soul. This archetype "philosophy of the heart" is revealed as the principle of individuality and "feeling of God" (P. Yurkevich), as a microcosm, an expression of inner man, the basis of humanity (G. Skovoroda), as a way to the ideal and harmony with nature (T. Shevchenko), as a source of hope, anticipation, providence (P. Kulish).

Given such fundamental elements of Ukrainian culture, we can argue that SEET programs are able to revive both naturally and organically, partially lost during modern times and industrial revolution, as well as the domination of the Soviet educational paradigm, the traditional context of Ukrainian culture and education, based on the development of emotional sensitivity, nurturing

moral virtues and spiritual growth in children. Adaptation of SEET programs, including the SEET program and the methods of its teaching, with a focus on culturally significant elements, such as folk wisdom, literature, art and traditions, will contribute to the formation of emotional and ethical consciousness that will reflect the deep values of the Ukrainian people.

Ukraine has a long history of being under the rule of various empires, including Russian and Austro-Hungarian. These historical periods contributed to the formation of a high distance of power, where the government was perceived as something arrogant, distant and hostile toward Ukrainians and Ukrainians. Thus, to a certain extent, a complex of "inferiority" of the Ukrainian nation was formed, which was obsessively proved during Ukraine's stay in the empires (Russian first of all).

The peculiarities of the historical background of the development of culture and education of Ukraine include: Historical traumas, attempts to establish statehood and its inability to hold it, the horrors of dekulakization and Holodomor, persecution of the Ukrainian language, the tragedies of the Second World War – all this strengthened the tradition of authoritarian governance and distrust of the authorities. It is also necessary to remember the resistans and the UPA's struggle against the Soviet authorities in wartime and post-war times, persecution of Ukrainian dissidents.

Historical events, such as the struggle for independence, revolution and war, have shaped Ukrainians' desire to achieve long-term goals. Thus, on the basis of the historical context, cultural features such as perseverance to achieve the goal of creating an independent state were formed in a certain way. At the same time, agricultural activities that defined the lives of many generations also contributed to the formation of long-term planning. The average level of long-term orientation (according to G. Hofstede's measurements) in Ukraine indicates a certain balance between the desire for immediate results and strategic planning for the future.

Despite the large number of historical injuries, scientists and scientists note that Ukrainians managed to preserve and carry through social tests such a characteristic as optimism [31]. This is one of the significant values of Ukrainian culture, which permeates all stages of Ukrainian history. Probably, it was thanks to her that the Ukrainian culture was able to survive in the terrible conditions of statelessness.

Ukrainian society has always had strong collectivist features reflected in culture, customs and lifestyle. In science, such value is designated as "solidarity" of the Ukrainian people, emphasizing that it provides integration in society and interaction between people [32]. This collectivist characteristic is deeply rooted in the culture and customs of Ukrainians, manifesting itself in various spheres of life: from family relations to community initiatives and volunteer movements. Responsibility to the community, mutual support and cooperation are the basic principles that contribute to the strengthening of social ties and harmony. Such traits help society to maintain unity and resilience in difficult times, and also form a positive moral climate where a person feels part of a larger whole. The solidarity of Ukrainians is also manifested in historical moments, when the people United to achieve common goals, protect independence and defend cultural identity. This collectivist tradition is also an important factor in the formation of national identity, based on mutual understanding, trust and common values.

The collective-farm system, which was introduced in Soviet times, would formally have to strengthen collectivist values, but at the level of everyday life and interpersonal relations as opposed to forced collectivism, individualism developed, manifested through the desire for personal freedom and freedom. "Freedom is so fundamental a thing of our lives that we value it only when it is taken away from us. And the search for freedom and the struggle for it – and against various oppression – is perhaps the most irritable force on earth. It was she who transformed freedom from the value of the Ukrainian people into its national mission" writes researcher M. Paradise [33].

In scientific studies individuals define as the most significant feature of Ukrainian life (V. Andrushchenko, A. Bidenko, V. Bogdanov, M. Boychenko, O. Donchenko, V. Ishchuk, N. Karaulna, V. Kremen, S. Krymsky, V. Krysachenko, S. Kiselev, O. Koval, O. Korh, N. Latygin, V. Liakh, M. Mikhalchenko, S. Naumkina, M. Pavlovsky, I. Pytailo, M. Primus, D. Chizhevsky et al.). O. Remenets notes that Ukrainian individualism manifests itself only when it develops into personalism – this is the way of attitude to the world in which the value of a person does not deny the significance of the surrounding social life [29]. This correlates with the average dimension of "individualism/collectivism" by G. Hofstede in Ukraine.

As you can see, Ukrainian history is rich in periods of political and economic instability. The SET of danger and unpredictability that accompanied different historical epochs has formed a high level of avoidance of uncertainty in society. Therefore, it is likely that the high level of this dimension (according to G. Hofstede) is explained by the fact that Ukrainians and Ukrainians are trying to avoid risks and unpredictable situations, prefer clear rules and stability. It also affects the education system, where clear and structured teaching methods traditionally dominate.

Worldview tolerance also expresses the ability of the Ukrainian people to accept mental attitudes of other peoples and their cultures in their culture. Tolerance is an unconditional value in terms of socio-cultural pluralism, in a society of competing interests, sometimes colored by national or confessional intolerance.

Modern difficulties in the formation of a young democracy with the restoration of independence, harmfulness of multi-vector nature and long-term uncertainty about the need to join the European Union and the development of democracy are also important for the culture of Ukraine. For quite a long time, the education system of independent Ukraine remained post-Soviet, which could not but affect the overall development of society and, accordingly, the cultural context.

After independence, Ukraine gradually reformed its educational system, trying to move away from Soviet practices and introduce new approaches that would meet modern European standards. Educational reforms promoted the democratization of the educational process, where students and students received more opportunities for self-expression and participation in decision-making. The new system of education has begun to pay more attention to individual development, independence and creativity of discipleship, which reflects the growth of individualistic tendencies in society. The introduction of more flexible programs, innovative methodologies, and project learning helps reduce the fear of the unknown and contribute to the development of critical thinking and adaptability.

The religious context is one of the components of culture, which in a certain way affects the processes of development or stagnation of countries. The analysis of the general trends in the prevalence of religious trends in the world indicates the connection between the religious context and the level of socio-economic development of countries [34] (**Fig. 6.2**). At the same time, we do not try to apply an evaluative approach to the "usefulness" of a particular religious trend in a socio-economic context. However, in our opinion, it is productive to monitor the impact of traditional priorities and values of peoples that arose on the basis of religious beliefs, on understanding the success and well-being of man and country and on the construction of an appropriate educational system in it.

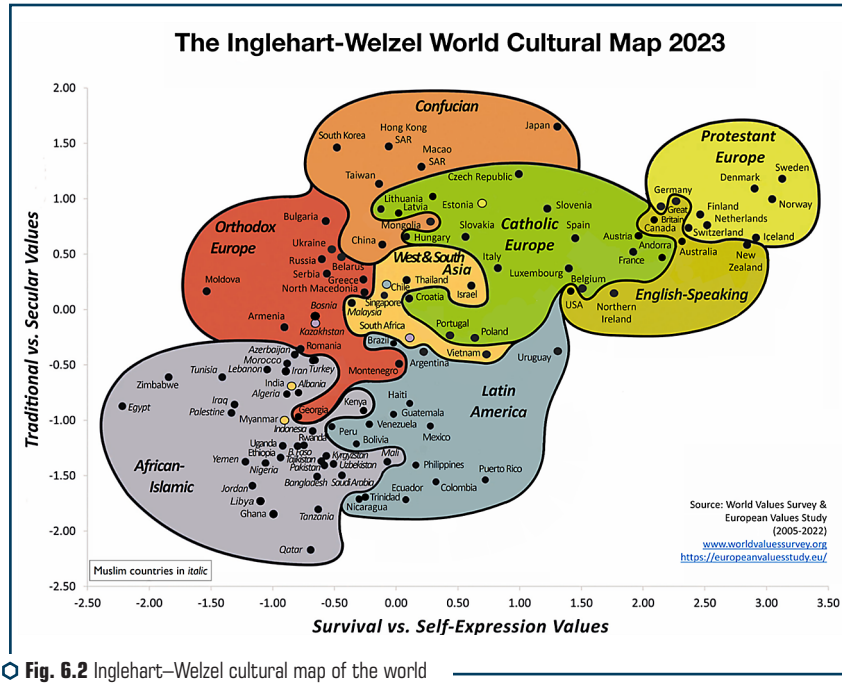

Fig. 6.2 Inglehart–Welzel cultural map of the world
Source: [34]

The most prosperous and democratic countries in Europe (Denmark, Iceland, Germany, Norway, Switzerland, Sweden) are mainly Christian countries, and among the currents of Christianity are countries where Protestantism prevails. They are known for their strong economies, high levels of education, advanced social security systems, and stable political institutions. One of the possible factors of the well-being of these countries is religious ethics and traditions, which emphasize the

importance of diligence, frugality and individual responsibility and social justice, which contributes to the development of social security systems. "At the beginning of the twentieth century, the classic of sociology, M. Weber, in his work "Protestant Ethics and the Spirit of Capitalism", tried to analyze the influence of Protestantism on the formation of capitalist relations and proved that it was the Protestant ethics that became the impetus for the development of capitalism. The impact of classical Protestantism on economic growth requires a comprehensive analysis of the causes of the influence of labor ethics on the economy to build a mature civil society in Ukraine", writes Ukrainian researcher K. Teteratnikov [35]. The education system in such countries stimulates innovation and research, particularly in THE area of SET, which contributes to economic growth and social well-being.

Countries that are predominantly Orthodox (Republic of Belarus, Republic of Bulgaria, Hellenic Republic, Republic of North Macedonia, Republic of Moldova, Russian Federation, Romania, Republic of Serbia, Ukraine) are less economically and socially developed than the countries where the West Christian branch prevails.

It should be emphasized that within the framework of Orthodox societies, which were subject to the influence of the communist regime, such as the Ukrainian one, there are cultural and religious features associated with the predominance of survival values, characterized by an ethnocentric worldview, preservation of traditions, low level of trust and tolerance, which was largely a consequence of the political and social conditions of the communist era [34]. The formation of the system of values of the peoples of these countries, including influenced by historical periods of political instability, external influences and conflicts, which adversely affected their economic and social development. Some of these countries have, or still have, authoritarian regimes that hold back economic reforms and democratization, slow down or even distort their development. The lack of public investment in modern educational technologies and infrastructure leads to less competitiveness of graduates and graduates in the global labor market.

As for the Ukrainian context, it can be noted that at certain moments Orthodox religious traditions could restrain social growth and democratic development of the country, because, as K. Teteratnikov notes, a certain religious worldview can both stimulate and interfere with the process of social transformations. The scientist emphasizes that Ukraine "needs a religious impetus", because, according to him, "at this moment, Ukrainian society, although it considers itself an Orthodox society, in fact, is so only nominally" [35, 139]. Since Ukrainian society has traditionally associated itself mainly with Orthodox values, the importance of pan-European ethical principles has often been overlooked. Only faced with the challenges of social and political choice and European integration processes, Ukrainians began to realize the importance of these principles. After all, the desire to live according to European standards, without a deep understanding of the key ethical foundations of civil society, complicates the achievement of the necessary level of social transformations and transformations [35, 146-147]. Moreover, it should be borne in mind that the religious context as a component of culture plays a role in the formation of the educational system of the country and can influence the implementation and dissemination of international innovative educational products, including SEET programs.

Taking into account the peculiarities of the Ukrainian cultural context, we note that the SEET programs, on the one hand, correspond to the cultural context of Ukraine and fit organically into it, on the other hand, they are able to change educational activities in a certain way, and possibly influence the cultural background of educational activities in Ukraine. Thus, taking into account the peculiarities and challenges of the NU-NS competence reform in Ukraine and the results of the five-year implementation of the SEET program in the domestic territory, we can say that social and emotional learning can become an important tool for further development of education and, probably, will have an impact on the democratic progress of the Ukrainian society as a whole. The SEET program fits well with Ukrainian culture, which historically has strong collectivist features. The program focuses on the development of empathy, emotional sensitivity and social skills, supports the "values of the heart" inherent in Ukrainian culture; it strengthens the traditions of mutual assistance and solidarity in society. This allows students to interact better with each other, ensures the creation of an empathic environment where equality, empathy and social interaction are important.

The facilitator's approach to teaching SEEN and the formative evaluation of learning outcomes promotes the democratization of the educational process, reducing the distance of power between teaching and apprenticeship, encouraging active participation of students in learning, developing their independence and critical thinking, which helps reduce the traditional authoritarian approach to education.

The SEET program provides the development of adaptability and flexibility in children, helping them nurture resilience and self-esteem in times of war. Teaching social and emotional skills and having an ethical component allows students to feel more confident in unpredictable situations, which is important for the modern world.

6.4 INFLUENCE OF CULTURAL CONTEXT ON DEMANDS OF MODERN UKRAINIAN SOCIETY TO SOCIAL AND EMOTIONAL SKILLS OF PERSONALITY

Currently, in the Ukrainian society and the education system, which is changing under the influence of the competence reform, the New Ukrainian School, there is a great need for the development of social and emotional skills of educators and apprenticeship. Social and emotional skills are individual abilities, traits and characteristics that can be developed over a lifetime, which are important for human well-being, academic success, competitiveness in the labor market, active citizenship, social relations and cohesion, and cover behavioral models, internal state, approaches to the performance of tasks, the ability to manage actions, to understand emotional states and to master them, ideas about oneself and the world embodied in a person's relationship with the environment [36].

L. Hrynevych notes that the NUS reform has shifted the focus of the educational process to "values: moral and ethical (dignity, honesty, justice, care, respect for life, respect for oneself and other people), socio-political (freedom, democracy, cultural diversity, respect for the native

language and culture, patriotism, respect for the environment, respect for the law, solidarity, responsibility). After all, the reliance on values is the key to successful self-realization of a person and prosperity and interaction in society. To implement this in life is possible, in particular, instruments of social and emotional learning" [37].

The values of NUS are closely intertwined with social and emotional skills in the movement of building an ethical basis for human behavior and interaction in society. Social and emotional skills such as perseverance, responsibility, self-control, stress resistance, control over emotions, optimism, sociability, curiosity, creativity, tolerance, empathy, trust, help a person to realize the established values in everyday life.

It is known that the educational system traditionally shows inertia in responding to socio-cultural transformations. There is a marked time lag between the evolution of social needs and the appropriate adaptation of educational programs. This dissonance indicates the conservative nature of education, which often does not keep up with the dynamic changes of macrosociety. At the same time, we can confidently assert that the public demand for the development of social and emotional skills through the education system will continue to grow in view of the war and post-war development of Ukraine. Those profound changes that have occurred and continue to occur in society and education will require the development of skills such as emotional regulation and stress resistance, systemic and critical thinking and adaptability, ethical awareness and civic responsibility. This will be facilitated by the need to cope with a huge number of victims of hostilities, and the return of injured (physically and psychologically) defenders and defenders, and the huge need for cohesion in the restoration of the country and joint work for this. Obviously, society will face challenges such as the spread of post-traumatic stress disorder among the military and civilian population, the problem of adaptation of those who returned from abroad, as well as the need to overcome the deep social gaps caused by the war, including the loss of housing and loved ones. It is also possible to break ethical norms and increase aggression in society. Addressing these challenges will require an orientation of the education system to develop the skills of communication, cooperation, empathy and tolerance that are necessary to build strong social ties and create a favorable climate in communities, the formation of ethical values and respect for other people.

The results of educational activities that graduates need for personal realization and life success throughout life and which are needed by the state, employers – key competencies, coordinated with cross-cutting skills, such as: critical thinking, the ability to solve problems, assess risks and make decisions, manage emotions constructively, apply emotional intelligence, cooperate in a team are outlined in the concept of the New Ukrainian School [37] and the analytical report "teach and learn: how and where to grow Ukrainian teaching" [38]. Such learning outcomes well reflect important changes in the educational process accompanied by modern world trends.

To a large extent, such competencies and cross-cutting skills are reflected in the professional standards of teaching and managers/-s of different categories. For example, in the professional standard for professions "primary school teacher of general secondary education institution", "Teacher of general secondary education institution", "Teacher of primary education (with a

diploma of junior specialist)" are available LC.02 "ability to interpersonal interaction, teamwork, communication with representatives of other professional groups of different levels (social competence) 04 "ability to make effective decisions in professional activities and responsible attitude to duties, motivating people to achieve a common goal (leadership competence)" [40]. Separately, it is worth mentioning the emergence of emotional and ethical competence (B2) in the teaching professional standard, which reflects the socio-emotional skills. Emotional and ethical competence includes: B2.1 – the ability to realize personal feelings, feelings and emotions, needs, manage your own emotional states; B2.2 – ability to interact constructively and safely with participants in the educational process; B2.3 – the ability to understand and appreciate the interdependence of people and systems in the global world [40].

Such requirements for the training and activity of teaching will certainly contribute to the implementation of social and emotional learning in the educational process, and, as a result, to the creation of an empathic environment in educational institutions that encourages cooperation, mutual respect and emotional development of discipleship. This, in turn, positively affects the academic results and the overall well-being of all participants and participants in the educational process, contributing to the overcoming of educational losses and gaps.

The cultural context discussed in detail in the previous divisions largely determines which socio-emotional skills are considered necessary and require active development, and which are not yet widely accepted in Ukrainian culture and, accordingly, education. In addition, the relevance of the context of Ukrainian culture and education with those values and skills that are inherent in the SEET programs is confirmed by the example of one of the most recognized and widespread programs in the world – SEEN, during a pilot survey "Cultural context of the SEET program in Ukraine"43 teachers and teachers from 24 schools, who took part in the all-Ukrainian experiment on its implementation (February – March 2024). This survey was conceived as a pilot in a series of long-term studies that will assess the impact of social and emotional learning programs on apprenticeship and teaching in Ukraine and provide an in-depth study of the process of developing socio-emotional skills in different cultural and social contexts, understanding the specific needs and challenges that may arise in individual cultures or regions, and how best to adapt social and emotional learning programs to these conditions.

The participants of the survey described the coincidence of Ukrainian cultural accents and the main ideas and practices of the SEET program as follows: "The SEET program does not contradict the culture and religion of Ukraine" and, even, "...widely promotes the values of Ukrainian culture". According to the respondents, the SEET program reflected such important aspects of Ukrainian culture as kindness, mutual assistance, respect for traditions and native language, etc.

In the survey, 31 people (72 %) noted that in the process of teaching the SEET program, they did not meet the concepts that they personally found difficult to perceive, given the Ukrainian culture and their own understanding of these concepts. 1 people (2 %) of the SEET program seemed to be partly understandable. 11 people (26 %) gave concrete examples of concepts that are not always perceived unequivocally in the modern context of the war in Ukraine, such as: "Empathy",

"good attitude, love and empathy for some others (enemies)", as well as traditionally less common and insufficiently taken into account in the culture definitions of "awareness, understanding yourself and your feelings and emotions", "physical literacy". It turned out that one of the challenges was to convey to children that "...first of all, there must be love for yourself, because their interaction with others depends on it". In a cultural context where collective values and self-sacrifice are often emphasized, it was difficult for children to understand the importance of self-acceptance and self-respect as the basis for healthy relationships with others. While teaching understands that developing this skill, which is an important aspect of the SEET programs, is fundamental to forming a sustainable, self-sufficient personality that is able to effectively confront the challenges of wartime.

So, as we can see, there are social and emotional skills that require more attention and development in the conditions of Ukrainian education, since they are not so deeply integrated into the public consciousness and until a certain time almost not supported by culture, which affected their importance in the education system. Their attitude has changed with the competent reform of the NUS in Ukraine, because today scientific research and experience of countries with a high level of socio-economic well-being proves that these skills are important and necessary for the future development of citizens and citizens.

Understanding the degree of coincidence of certain skills with the Ukrainian cultural context should become the basis for the integration of international SEET programs and the development of approaches to their organic implementation in the educational process. This will ensure the harmonious development of the individual within the national culture and adaptation of the educational system of Ukraine to modern challenges.

With the help of comparative analysis, we have identified three groups of social and emotional skills of a person that in varying degrees meet the cultural context of Ukraine and the requirements of modern Ukrainian society to the results of educational activities. For comparison, 40 frameworks of social and emotional skills (framework – a set of key competencies that contribute to social progress and individual development [41]), created by various organizations in different countries of the world and presented in the well-known study of the SEET-Framework of the laboratory EASEL Harvard University [42]. Within some frameworks, social-emotional skills are represented in the classical SET, in some as combinations called "skill components" or "competence". The skill is indicated in this way, if several of its "components" are presented in the frame with a detailed explanation of what it consists of. Thus, the same social and emotional skill can be called in one frame skill, in another competence. To avoid confusion, we will then use the generic designation "competence/ skill" or socio-emotional skill:

1. The first group – socio-emotional competence/ skills that are consistent with the Ukrainian cultural context – is the most numerous, but not homogeneous. These social and emotional skills are integrated, although to varying degrees, into the national culture and education system of Ukraine, and are mainly recognized and supported in Ukrainian society, they naturally fit into existing social norms and behavioral models. Among these skills: Perseverance, empathy, the ability to cooperate and support others.

For example, the competence/ skill of "perseverance", reflected in several frameworks of the SEET, corresponds to the domestic cultural context in the sense of importance in achieving the goal and overcoming difficulties in this way. This competence is defined by the authors of the framework of the IRC competence in the field of social and emotional learning as "a set of skills that allow you to overcome difficulties and continue to work toward achieving a realistic goal" [42]. In the world-famous OECD framework, perseverance is defined as consistency, resilience, and commitment to tasks and activities until they are met.

Common within the framework of socio-emotional skills is the "focus on achievement", which is listed in the list of interrelated with "perseverance" skills. The achievement orientation is defined by the OECD as "the ability to set high standards for yourself and work hard to meet them".

Note that "persistence" and "focus on achievement" as separately defined competencies are not presented in the concept of NUS, as they are not in the framework of SEEN, although in the methodological materials "perseverance" is mentioned and its development is actually supported by the program [43]. Despite this, the integration of these socio-emotional skills into the domestic educational process actually takes place in the movement of reforming the NUS and is a natural process that is close to the Ukrainian cultural context. Such integration is ensured, in particular, by creating an educational environment that supports and motivates children to overcome the challenges and difficulties they face. This can be largely ensured by the implementation of SEET programs, including seen, which are based on a facilitator's approach to learning and effectively contribute to the formation of discipleship of stability and ability to achieve their goals, which is important not only for academic success, but also for later life.

The Ukrainian cultural context is organically consistent with the skill of "empathy", although the more common within the framework of socio-emotional skills is the consonant term "empathy". Empathy is presented, for example, in the framework "life skills and civic education of UNICEF MENA – Conceptual and programmatic basis". The essence of this skill is revealed in the following way: "The ability to understand the feelings of another and to relive them yourself at the same time never to condemn".

In Ukrainian culture, this term was more likely to be referred to the field of psychology and began to be used in the educational context relatively recently, often associated with empathy, kindness, humanism. Participants of the survey "Cultural context of the SEET program in Ukraine" note that the concept of "empathy" is close to them in such an associative connection. One of the teachers, expressing her understanding, stressed that the concept of "empathy" is identical with the Ukrainian concepts of kindness and empathy, which are key in the SEET program: "Kindness manifests itself in sincere and kind feelings, humane attitude to people, which is the main value of Ukrainian culture".

It should be noted that in the SEET program, the concept of "empathy" is given precisely in such a broad context through empathy and willingness to help others, based on the understanding of the feelings and emotions of others in the context, paying attention to the common reality with others, valuing and cultivating various ethical institutions. The SEET empathy program defines empathy as

"the attitude toward oneself, others, and humanity as a whole through the prism of goodness, empathy, and attention to positive emotions and suffering" [43].

It should be noted that the use of the category of "empathy" natural for the social consciousness of Ukrainians in close conjunction with the less close Ukrainian cultural context, the definition of "empathy" causes a certain disorientation in teaching and discipleship. One of the respondents of the survey "the cultural context of the SEET program in Ukraine" cites one of the situations from the SEET materials, on the example of which the pupil should understand the concept of "empathy". The teacher notes that the children did not understand the emotions of the hero of the situation – his peers, because he did not voice them, which caused the question: "Why did he not say directly that he did not want to participate in the event? How could others understand his experiences when he did not even voice them?" This example shows that it is difficult for students to understand the very concept of empathy. Although in general, they were ready to empathize and support the guy if he said it.

In our opinion, this indicates the need for a more clear and understandable explanation of these concepts at the teacher level and the development of strategies to bring them to discipleship. It may be necessary to include additional examples in the SEET methodological materials that would better reflect the Ukrainian context and be more understandable for discipleship. In addition, it is important to teach children to recognize and express their emotions so that they can better understand the emotions of others and develop empathy. It is important that teachers have sufficient resources and methodological materials to effectively explain these important skills.

Analyzing the classification of cultures of G. Hofstede and the historical and cultural context of Ukraine, we saw that in the domestic culture, together with empathy and empathy, we appreciate the ability to cooperate and support others, which in one form or another is present in many aspects of SEET. The framework of the EU NESET Framework for Social and emotional Education contains the skill of "social consciousness", which is formulated in the following way: "Students are able to look at others and empathize with others, as well as recognize and appreciate individual and group similarities and differences, diversity and social inclusion. They have a sense of connection and belonging to the community. They are able to search and properly use the resources of the family, school and community according to age. They demonstrate pro-social values and behavior and are motivated to contribute to the well-being of their schools and communities. They also value and care about the physical environment".

In the framework of SEEN in the component "relationship skills" "help others" is presented as a separate skill. The survey notes that for Ukrainians it is customary to help others, care for them, "innate" cohesion. One of the respondents notes that this is one of the values of Ukrainian culture. Another respondent expressed the following opinion: "People of our mentality do good deeds sincerely, and never would have asked: "What will happen to me if I help?".

In the group of skills that are relevant to the Ukrainian cultural context, we can see those whose content is interpreted very close to domestic traditions. At the same time, they are sometimes perceived through the prism of traditions and even prejudices in society, which is most often explained by terminological controversial. The casel framework defines social recognition as

"the ability to look at and empathize with other people, including people of different backgrounds and cultures, the ability to understand social and ethical norms of behavior and recognize resources and support for families, schools and communities" [42].

It is obvious that such a skill is consonant with the values of Ukrainian culture such as tolerance, empathy, cooperation. It is important to adapt the translation of these skills and to explain to the teacher their importance and advantages of application in practice. This will allow the teacher to better understand how to integrate these skills into the educational process, which in turn will contribute to the development of a harmonious and adaptive personality. It will also help teachers to use methods of social and emotional learning more effectively, taking into account the peculiarities of Ukrainian culture and context, which will significantly increase the effectiveness of the educational process and support of apprenticeship in their personal development.

The relevance of these and many other socio-emotional skills of the Ukrainian cultural context allows adapting international practices to Ukrainian realities, increasing their effectiveness in the educational process, preparing for life as citizens and citizens. This approach will ensure greater compliance of educational programs with the needs and expectations of society, making education more relevant and practical.

In addition, taking into account the cultural context increases the acceptance and support of new educational initiatives among teachers, apprenticeships and the parent community, which, in turn, contributes to the successful implementation of SEET in Ukrainian schools. This makes the educational process more harmonious and promotes the development of children in accordance with the cultural and social realities of their environment.

2. The second group is social and emotional skills, which have certain correlations with the Ukrainian cultural context. These skills require active development and support in the educational process. They are important for adapting to modern challenges and strengthening social cohesion, but may not be fully integrated into the Ukrainian cultural context. Among these skills can be defined: Effective communication and conflict resolution, responsibility, critical thinking, etc.

As noted above, Ukrainian culture emphasizes the importance of goodwill, empathy and mutual assistance. These values contribute to the development of effective communication skills, as communication with others is based on respect, empathy and willingness to understand and support each other. At the same time, in Ukrainian culture, the skill of "conflict resolution" is not developed enough due to historical, cultural, educational and social factors. Ukraine still retains patriarchal customs that can help resolve conflicts through authoritarian methods.

Although the educational system of Ukraine gradually introduces elements of social and emotional learning, traditionally in schools more attention was paid to academic achievements than to the development of conflict resolution skills. This may limit the ability of children to learn constructive methods of solving them.

This is a certain challenge for the education system, which posits the importance of acquiring social and civic competence by pupils and its component – "skills to prevent and resolve conflicts, to reach compromises", which is laid down in the concept of NUSH [38].

This skill/competence is widely represented within the social and emotional skills of the Harvard EASEL Laboratory. For example, the framework "IRC's social and emotional learning competencies" defines conflict resolution competence as "a skill set that helps to positively solve problems and conflicts between people when they arise".

Such valuable social and emotional skills should be developed in discipleship, because they are very important in today's globalized world. As well as the responsibility skill, which is presented in nine out of forty frameworks of social and emotional skills, including such generally recognized as the framework of the Organization for Economic Cooperation and Development, where this skill is considered as "the ability to fulfill obligations, to show punctuality and reliability". In the framework of "Development assets (12–18 years)", this skill is indicated in a similar way "a young person accepts and assumes personal responsibility". Note that the skill of "responsibility"мis not sufficiently represented in the cultural context, although it is very important in the seтse of building a democratic society.

The Singapore Framework for 21CC and Student outcomes states that the responsible person is aware that he/she has a duty to himself/herself, his/her family, community, nation and the world, and fulfills his/her duties with love and devotion. Within the framework of the values and life skills structure (VaLI) in Kenya, it is noted that the responsibility is the discipleship, which is able to realize its role and functions and actively perform them as best as possible, including the care of personal property, the performance of assigned roles and responsibilities at home, at school and in a wider society. This emphasizes the importance of individual responsibility in different contexts and levels of social interaction, proclaims a systematic approach to the development of responsibility, where each individual understands his place in the system and actively performs his duties, contributing to the general well-being.

Responsibility is defined as:

1) the ability of a person to understand his role (in a certain context, that is, at home, at school, at work, in relationships) and to reliably perform tasks related to this role;

2) the belief that his choices and actions can influence events in their lives and lead to positive results.

The importance of this skill is reflected in the concept of NUS at the level of goal-setting, which states: "Educated Ukrainians, fully developed, responsible citizens and patriots, capable of risk and innovation, are the ones who will lead the Ukrainian economy forward in the XXI century" [38].

Responsibility in the NUS concept is presented not only as a skill, but also as one socio-political values, along with freedom, democracy, cultural diversity, respect for the native language and culture, patriotism, respectful attitude to the environment, respect for the law, solidarity, which is aimed at the educational process. In our opinion, the development of this skill will significantly affect the cultural background of Ukrainian society in the sense of strengthening democratic traditions through the education system.

We can argue that "responsibility" is closely related to "citizenship", since both competencies/skills contribute to the formation of conscious and active citizens and citizens who are able to

interact effectively in society. Responsibility involves making personal decisions and actions taking into account the consequences, which is the foundation for the development of civic consciousness. Citizenship, in turn, includes a sense of duty to society and participation in the community, which is impossible without a responsible attitude to their actions and decisions.

The skill of "citizenship" is revealed in the framework of "Kenya. BECF's core competencies for basic education are as follows: "A condition endowed with the rights, privileges and duties of a citizen, he creates a sense of belonging and friendship to his nation, a sense of citizenship helps young people to skillfully and tolerably cope with the situation of conflict and disagreements, they are able to understand the consequences of their actions and the actions of the surrounding adults". It should be noted that such a mutual understanding of the essence of this skill in the Ukrainian context is reflected in the framework made in the country, which also outlined its movement toward democratic transformations.

Interestingly, within the framework of the Singapore Framework for 21CC and Student outcomes, developed by the Ministry of Education of Singapore, this competence is also presented in a comprehensive form as "civic literacy, global awareness and intercultural skills". This indicates the universal significance of this competence, regardless of the socio-economic differences between the countries. This emphasizes the importance of civic skills for the development of sustainable and cohesive societies, where every citizen understands his role and actively participates in the life of the community.

It is important to note that "citizenship" is also represented among the 10 key competencies of the New Ukrainian School in the form of social and civic competence [38, 11], which is fundamental to maintaining social stability, democratic processes and the common well-being of the country.

The skill of "critical thinking" is also important for life in a democratic society, because it ensures awareness, active participation of citizens, protection from manipulation and contributes to the sustainable development of society as a whole. This skill is underrepresented in the Ukrainian cultural context for several reasons, including cultural features, historical context and the influence of the Soviet period. This can also be explained through the prism of the theory of cultural dimensions of G. Hofstede, according to which the Ukrainian culture is characterized by a high level of avoidance of uncertainty. This means that society seeks to avoid ambiguity and unpredictable situations. Critical thinking, which encourages doubt, questions, and the search for alternatives, may contradict the cultural inclination to stability and predictability. Critical thinking, which involves questioning authority and established rules, may not be so common in cultures with a high distance of power, to which Ukraine belongs.

The concept of NUS clearly reflects the need of Ukrainian society in the development of critical thinking. Critical thinking is defined among key competencies and through skills. The graduate/-student of NUSH is considered as a whole person, comprehensively developed, capable of critical thinking.

In the framework of "employability skills", the skill of "critical thinking" is described in this way "the student/ this shows analytical and strategic thinking. This can be seen in the discussion of the issue, reaching understanding, assessing the problem and asking questions".

Note that critical thinking requires an ethical approach devoid of prejudice. Improper or unethical use of critical thinking can lead to manipulation or negative impact on other people. The formation of such thinking in discipleship involves not only the development of analytical abilities, but also the formation of respect for the opinions of other people, even if they contradict personal opinion. This requires a combination of critical and systematic thinking to solve problems, as proposed for example in the SEET program. Together, these skills help individuals not only analyze their emotions and behavior, but also understand how these aspects interact with a broader social and cultural context, contributing to a more effective and harmonious functioning in society.

System thinking focuses on understanding how different parts of the system interact with each other and how changes in one part of the system can affect other parts. Systemic thinking helps people to see the connections between their actions and consequences, as well as to understand how their emotions and behavior affect their environment and the overall dynamics of social situations. This enhances the development of critical thinking. Critical thinking helps individuals to understand their own emotions and thoughts, and to recognize and evaluate the impact of other people on their emotions and behavior. It promotes the development of skills of self-regulation and awareness.

Critical thinking allows you to analyze specific situations in detail and evaluate various factors. Systemic thinking helps us understand how these factors interact in a broader context. For example, when resolving a conflict between peers, critical thinking can help to consider the causes of the conflict, and systemic thinking will help to understand how this conflict will affect the relationship in the group.

In SEET, both types of thinking are combined to develop skills that help people communicate effectively, resolve conflicts, and manage their emotions in difficult situations. For example, in learning self-regulation skills, critical thinking can help students evaluate their emotional responses, and systems thinking can help them understand how these reactions affect their relationships and the environment [43].

3. Ehe third group – social and emotional skills, which are not yet widely accepted or widespread in our culture need more promotion and implementation, because they ensure the success and well-being of a person in the modern world. Thus, the introduction of concepts such as "self-acceptance and positive attitude to yourself", "the ability to manage stress and emotional state" can face resistance through cultural features and traditions. The presence of such concepts was confirmed by the results of the survey "Cultural context of the SEET program in Ukraine", during which social and emotional skills were identified, for example, emotional management, physical literacy, bodily sensations, which turned out to be less acceptable or incomprehensible to teachers and students. We consider this group of skills as those that require a certain development in the context of Ukrainian culture.

The forced imposition of collectivism and the suppression of individuality in the Soviet times of the history of Ukraine led to the fact that the issue of positive attitude to themselves, the cultivation of self and individuality were unacceptable and even subjected to condemnation, especially in

the education system. This is rooted at the level of everyday educational practices and can interfere with the development of socio-emotional skills of discipleship and their personality in general. The teacher from the school introducing SEEN illustrated this as follows: "We used to help others, to worry about others, and to postpone their interests. This is one of the values of our culture. We have "innate" cohesion, and children perceive the care of themselves as selfishness".

Instead, SEET programs have significant potential for the development of individuality, without interfering with collectivism. Such programs ensure the development of emotional intelligence, self-reflection skills and self-regulation, which are key to understanding their own goals and capabilities, also help students learn to interact with others, supporting a culture of mutual respect and cooperation against the background of the development of individuality, which is the foundation of a democratic society.

Thus, the site of the laboratory at Harvard University EASEL presented a number of skills aimed at nurturing individuality, among which, for example, self-knowledge, self-esteem, self-awareness, stress resistance.

Self-knowledge is interpreted as a skill to identify and understand personality/character traits, interests and preferences, own strengths and weaknesses; be honest with yourself, maintain a stable and consistent understanding of your own identity and roles in different situations over time. Self-knowledge is a reliable basis for the development of self-esteem of discipleship.

Self-esteem is interpreted within the framework of social and emotional skills quite widely, in particular, as involvement, feeling of own value in society, showing kindness and understanding to oneself (for example, self-compassion, emotional self-esteem, etc.), forgiveness of mistakes (for example, taking past actions and prolonging life). This skill is also based on understanding the impact of risky behavior (such as drug use, alcohol, tobacco, unprotected sex, etc.) on your body and using this information to make responsible choices. Such an emphasis is extremely relevant for preventive work among modern adolescents, as is the emphasis on positive self-esteem. The 21st century M. Hilton and T. Pellegrino competence clusters framework even marks this skill as a "positive basic self-esteem" – self-regulation (self-control, self-esteem, self-reinforcement), physical and psychological health.

The development of individualism, combined with respect for the collective, is an important task for Ukrainians in the modern context, which can be realized by raising in teaching and discipleship awareness of their own individuality, interests and goals through education and self-education. By developing their interests and knowledge, people can understand themselves and determine their role in society. We believe that SEET programs will help Ukrainians and Ukrainians to develop individuality, while maintaining the importance of collective values and norms, which is essential for a harmonious society.

Self-awareness is one of the key skills that helps students better understand themselves, their emotions, and their own strengths. Self-awareness includes several important aspects, including the ability to recognize and identify your emotions, understand how they affect behavior and interaction with others. Through this, discipleship masters bodily practices of self-help, learns to analyze

their actions, thoughts and feelings, evaluate their successes and mistakes as an element of emotional literacy. The development of self-awareness helps students and students not only to better understand themselves, but also to interact more effectively with others, which is an important component of successful social and emotional development. This contributes to the formation of self-confidence and the ability to cope with challenges and stresses.

In the framework of SEEN there is a component of "self-regulation", consisting of three skills: Body balancing, cognitive and impulse control, navigation of emotions.

Cognitive and impulsive control as a skill of "keeping attention on the object, task or experience, avoiding distraction" is more understandable to Ukrainian teachers and students. Because "attention" as an important skill of the student/ pupil is traditionally valued in the education system of Ukraine, although it is understood mainly declaratively.

At the same time, a deep understanding of the basis of this skill, which is provided by physical and emotional literacy of discipleship, is not always perceived by Ukrainian teachers. Instead, in the SEET program, all three skills are presented in a complex. Body balancing (bodily literacy) is understood as the skill of regulating the body and nervous system, especially during activation, stress or lack of energy to optimize well-being, and "navigating emotions" (emotional literacy) is the skill of reacting constructively to impulses and emotions and developing behaviors and attitudes that contribute to long-term well-being. The ability to manage emotions constructively, to apply emotional intelligence is also among the through skills of NUSH [38, 12], which emphasizes the importance of these skills in Ukrainian education.

Difficulties in understanding emotional and especially physical literacy were noted by the interviewed teachers of SEEN. Thus, among the concepts that were difficult for them to perceive, in view of Ukrainian culture and their own understanding, often called those practices that provide the development of the skills of "balancing the body", such as "reading bodily self-sensations", "grounding", "resource", "awareness, understanding yourself and your feelings and emotions".

At the same time, the teacher was convinced that in the current conditions of Ukraine, the skills that form the basis of self-regulation are critical for maintaining the stress resistance of apprenticeship and educators. They allow you to maintain physical and mental balance, make deliberate decisions and manage emotions, which are key aspects of successful overcoming stressful situations.

Stress resistance is an important component of social and emotional learning and is presented in many areas of social and emotional skills. Stress resistance is defined in the act holistic Framework as follows: "The degree to which a person can control feelings of anxiety and other negative emotions to function effectively in different situations". A similar stress management skill is present in the building blocks for learning framework and is formulated as "a constant change in cognitive and behavioral efforts to manage specific external and/or internal requirements that are assessed as burdensome or exceeding human resources".

The stress-resistance skill is particularly important in wartime for apprenticeship as students and students face numerous challenges that affect their emotional and psychological state. In war, the development of the ability to cope with stress becomes critical to maintaining well-being.

However, in the cultural context of Ukraine, this skill has not previously received due attention, which is partly due to the neglect of personal experiences of a person and the dominance of traditional approaches in education, which provide an emphasis on academic training to the detriment of individual needs. In Ukrainian culture, individual strategies of self-regulation have always remained unappreciated. Taking into account modern realities, the implementation of stress resistance skills in the curriculum is necessary. This will not only contribute to the emotional stability of discipleship, but will also increase their ability to adapt to difficult life circumstances. It can be argued that stress resistance is particularly important in wartime, but in the cultural context it has not been given much attention.

In the framework of the survey "Cultural context of the SEET program in Ukraine", assessing the difficulties in the perception of certain concepts by students, the respondents noted several main reasons. Thus, in the Ukrainian school are usually used in teaching mentoring explanations, while the SEET program requires discipleship of independent understanding and acceptance of their own conclusions. That is, it is very important to make the transition from mentor type of teaching to facilitator. Taking into account these difficulties can help the teacher better adapt the program and methods for students and students to perceive difficult concepts for them.

The answers of the teachers demonstrate the need for further adaptation of the SEET program to the Ukrainian educational and cultural context, as well as the need for a deeper study of the interaction of cultural, educational and psychological factors in the course of teaching SET.

6.5 WAYS OF ADAPTATION OF PROGRAMS OF SOCIAL AND EMOTIONAL LEARNING TO THE UKRAINIAN CULTURAL CONTEXT

Based on the experience gained in implementing the SEET program in Ukraine, we consider it useful to take into account the aspects of adaptation of social and emotional learning to the Ukrainian cultural context, provided that the oncoming movement is transforming the educational approach in Ukrainian schools. Taking these aspects into account in scientific research and practice, on the one hand, will help to make SEET teaching methods more sensitive to the cultural characteristics of the Ukrainian school, on the other hand – it will allow teachers not only to develop social and emotional skills in apprenticeship, but also to practice them in their pedagogical activities, to master a facilitator's approach, to introduce changes at the level of educational policies of schools:

1. Understanding and appreciation in the educational process of Ukrainian cultural features, such as a combination of collectivism and individualism, long-term orientation and appreciation of education, perseverance in achieving goals, as well as a natural tendency to mutual assistance and respect for traditions. These cultural features can contribute to a better perception of some SEET concepts, but at the same time require flexibility and adaptability from programs.

2. The transition from traditional in Ukrainian culture mentoring type teaching to a facilitator approach. This means that the teacher should become not just a source of knowledge, but instead support discipleship in the process of self-knowledge and acceptance of their own conclusions.

Instead of just explaining the material, it is necessary to create conditions for the active involvement of discipleship in discussions, practical tasks and group projects. This is important, in particular, given the large distance from the authorities (in this case, the teacher's) characteristic of Ukrainian culture. This approach will help to increase the level of student confidence in teaching, help students and students to learn more deeply and independently the material of SEET programs.

3. The importance of teaching style correction. Teachers and teachers should use a variety of methods to explain complex concepts for Ukrainian students, including practical exercises, reformulating the material and using examples from life experience. This will help to ensure better assimilation of the material by apprenticeship.

4. Taking into account in the educational process that adaptation, explanation and perception of some concepts of the program of social and emotional learning, such as self-regulation, physical literacy, requires from the teaching, apprenticeship and parent community greater effort. It is important to give teaching, apprenticeship and fatherhood auxiliary methodological materials for such topics that are perceived as difficult due to the lack of appropriate cultural analogs.

5. The use of Ukrainian names, examples from domestic literature and culture, appeal to certain historical examples in order to make the material of SEET programs more relevant and understandable for discipleship.

CONCLUSIONS

1. According to the classification of cultures of G. Hofstede, the peculiarities of Ukrainian culture have a significant impact on the implementation of social and emotional training programs and may conflict with the values of some SEET-programs. Thus, Ukrainian culture is characterized by a great distance from the government. This means that there is significant inequality in the distribution of power and authority in society. This creates challenges for the implementation of SEET programs, since such programs are focused on the development of self-government skills, democratic thinking and equal communication. Obviously, for the successful implementation of SEET programs, additional work with the teaching community and administration is required to change the mentoring approaches to teaching, as well as the management and creation of appropriate policies of educational institutions.

The average value of individualism inherent in Ukrainian culture means orientation to both personal and collective values and group goals. Such a feature of Ukrainian culture will contribute to the implementation of SEET programs, as they include the development of social skills, cooperation and teamwork.

Ukrainian culture is not characterized by great importance of the value of achieving the result at any cost. This can be a positive factor for THE implementation of SEET programs, because against this background it is easier to form healthy interpersonal relationships, develop empathy and ethical guidelines, which are key concepts of SET.

The propensity to sustainable solutions may be a challenge for THE implementation of innovative SEET programs, as the educational system and the teaching community may be less open to new approaches and techniques. For successful implementation of SEET-programs, additional training of teaching is required, as well as adaptation of programs to existing educational and cultural practices.

The orientation of Ukrainian culture to long-term prospects and willingness to invest in the future can contribute to the implementation of SEET programs, because such programs are aimed at developing skills that benefit in the future, ensure the continuity of education and further well-being.

A negligible value for life satisfaction can be a challenge for implementing SEET programs because such programs tend to focus on improving emotional well-being and life satisfaction. This perspective requires additional work to raise awareness of the importance of emotional health and well-being among discipleship, the parent community and teaching.

2. With the help of comparative analysis, we have identified three groups of socio-emotional skills of a person that in varying degrees meet the cultural context of Ukraine and the requirements of modern Ukrainian society to the results of educational activities:

– the first group is competence/ skills that are consonant with the Ukrainian cultural context (perseverance, empathy, the ability to cooperate and support others, etc.);

– the second group of skills has certain correlations with the Ukrainian cultural context, but requires active development and support in the educational process (effective communication and conflict resolution, responsibility, critical thinking, etc.);

– the third group – skills that are not yet widely accepted or widespread in our culture need more popularization and implementation (self-knowledge, self-esteem and positive attitude to themselves, self-awareness, stress resistance and the ability to manage emotional state, etc.).

3. Introduction of programs of social and emotional training in Ukraine revealed the importance of adaptation of international educational initiatives to local cultural realities. As a result of the survey of teachers participating in the SEET program, the need for deep integration of Ukrainian cultural values and ethos into the educational process is determined. Approaches to learning that take into account cultural contexts increase the effectiveness of educational programs and contribute to better perception and assimilation of the material by students. Pedagogical teams have a request for more understandable exercises and cases based on Ukrainian culture, as well as the implementation of exercises that will develop those social and emotional skills that are not sufficiently developed in Ukrainian apprenticeship.

It is possible to draw such directions of further research of teaching of the SEET program, which will help to create an educational environment which is sensitive to cultural features and will provide more effective development of socio-emotional skills of discipleship. Among such areas, for example, checking the effectiveness of adapted SEET programs in different regions of Ukraine, taking into account cultural characteristics. Conducting an in-depth survey of the expert community and practicing teachers will help assess the success of the adaptation of SEET programs to the cultural context, strengthen the approaches and tools of teaching SEET.

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