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Editors office address:

National University of Life and Environmental Sciences of Ukraine
03041, 15 Heroiv Oborony Str., Kyiv, Ukraine
E-mail: info@humstudios.com.ua
<https://humstudios.com.ua/en>

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03041, вул. Героїв Оборони, 15, м. Київ, Україна
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Internet platforms in an open educational environment in the organisation of students' independent work

Vasyl Dudar*

PhD in Historical Sciences, Associate Professor
Hryhorii Skovoroda University in Pereiaslav
08401, 30 Sukhomlynskyi Str., Pereiaslav, Ukraine
<https://orcid.org/0000-0001-6064-9408>

Viacheslav Riznyk

PhD in Pedagogical Sciences, Associate Professor
Hryhorii Skovoroda University in Pereiaslav
08401, 30 Sukhomlynskyi Str., Pereiaslav, Ukraine
<https://orcid.org/0000-0002-6083-2242>

Vitalii Kotsur

PhD in Political Sciences, Doctor of Historical Sciences, Professor
Hryhorii Skovoroda University in Pereiaslav
08401, 30 Sukhomlynskyi Str., Pereiaslav, Ukraine
<https://orcid.org/0000-0001-6647-7678>

Volodymyr Nosachenko

PhD in Pedagogical Sciences, Associate Professor
Hryhorii Skovoroda University in Pereiaslav
08401, 30 Sukhomlynskyi Str., Pereiaslav, Ukraine
<https://orcid.org/0000-0003-0266-5199>

Abstract. In the age of digitisation and information, open educational resources and technologies are an integral element of the learning infrastructure, ranging from podcasts to electronic libraries, textbooks and games. The purpose of this paper was to study various Internet platforms in an open educational environment designed for independent study of students. For this, the methods of analysis, synthesis, comparison, deduction, systematisation and generalisation were used. As a result of the conducted research, a wide range of Internet platforms was discovered that make the learning process interactive and interesting. It has been established that foreign resources occupy leading positions in the world, many of which can be translated into most common languages. During the study, the main platforms, their advantages and disadvantages were analysed. The obtained results indicated that educational

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*Corresponding author



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resources are constantly developing, new ones are created, which allows each teacher to find a suitable tool for implementation in his own educational approach. The findings so far indicated that the use of these digital platforms significantly improves student engagement in the educational system and promotes the development of self-directed learning. The results of this study represented valuable information for teachers of higher educational institutions, which allows them to optimise the structuring of the student's independent work. In addition, these results can be used by developers of educational programs for flawless integration of innovative technologies into the pedagogical process. Ultimately, students themselves can benefit from this research by improving their self-directed learning strategies

Keywords: educational activity; technologies in education; integration digitalisation; network model

Introduction

Technological advancements are driving significant and transformative shifts in various sectors, including education. By integrating digital tools and resources into the learning environment, institutions can substantially enhance productivity and outcomes. These technologies facilitate the proliferation of course offerings, expand access to learning materials, and enable round-the-clock, on-demand learning. Moreover, they equip students with the competencies essential for success in the contemporary, technology-driven world. In addition, they greatly increase the involvement and motivation of students and schoolchildren, allow improving and accelerating the learning process.

Technological advancements have facilitated the emergence of innovative network-based learning paradigms. These models foster interconnectedness among educators, learners, and external professional networks, enabling personalised and enhanced learning experiences (Chugh *et al.*, 2017; Bin, 2017). Consequently, technology has ushered in a new era of digital learning tools and platforms. The integration of online learning, open educational resources, and various technologies has the potential to optimise learning outcomes by accelerating the pace of acquisition, minimising costs associated with instructional materials and program development, and streamlining instructional processes for educators.

Contemporary scholarly discourse is centred on the potential integration of internet platforms into the framework of independent student work.

R. Huang *et al.* (2020) elucidated that open educational resources (OER) distinguish themselves from open learning by primarily comprising educational materials, whereas open learning encompasses a broader spectrum including data and supplementary educational services. J. Arcebucho (2022) provided a comprehensive overview of OER examples, encompassing online textbooks, video lectures, digital media content, self-study materials, simulations, visual aids, massive open online courses, and even automated assessment tools. Furthermore, the researcher identified presentation slides and lecture notes as additional components within the OER landscape. According to S. Aljawarneh (2020), OER must be freely accessible, at least for educational purposes, to be classified as such. The researcher also underscored the pivotal role of educators in ensuring the efficacy of independent student work. Q. Feng & B. Feng (2021) concluded that internet platforms serve as repositories for a substantial volume of data, which students can leverage to explore relevant topics and augment their knowledge through the amalgamation of educational resources. This study established that the aforementioned strategies facilitate personalised learning experiences, sustain student engagement, and provide valuable support to educators throughout the instructional process. A study by J. Komljenovic (2021) found that digital learning platforms allow students to actively interact with learning materials. In addition, the researcher was

able to determine that depending on the type of platform, the teacher can ask the students to use the software in the classroom during the lesson or interact with it at home for additional practice during the course. M. Al-Emran (2020) investigated the functions of educational platforms that provide the organisation of adaptive learning. As a result, it was found that their tool dynamically changes tasks and lesson plans depending on the results of each student. Thus, the following classification was proposed: digital learning platforms aimed at different educational goals, including tools designed for students to accumulate knowledge in specific subjects, such as natural or social sciences, and other tools aimed at developing interdisciplinary skills, such as reading or writing.

This study was aimed at a comprehensive assessment of the effectiveness and potential impact of the inclusion of foreign Internet platforms in the educational landscape in order to increase the ability of students to independently study. It aimed to thoroughly assess the functionality of these platforms, identify exemplary implementation strategies, and formulate recommendations for educators and institutions planning to integrate these technologies into their distance learning programs. The specific objectives of this study included a comprehensive analysis of open education opportunities and technologies supporting independent learning on a global scale, culminating in a benchmarking of these resources. An innovative aspect of this study was the exploration of Internet platforms as valuable tools for individualised student learning.

Materials and Methods

During the conduct of this research, a comprehensive approach was applied, which included the methods of analysis, synthesis, comparison, deduction, systematisation and generalisation. The analysis method was used for a detailed study of various foreign Internet platforms, their functionality and features. With its help, the structure, interface, and capabilities of each platform for organising students' independent work were

carefully analysed, including Canvas, Coursera, Khan Academy, Nearpod, GoReact, and others. Synthesising the collected analytical data, common attributes characterising effective foreign digital platforms designed to promote independent student learning in an open educational environment were distinguished. This synthesis made it possible to identify the main components that should be included in a reliable educational platform. A comparative analysis was conducted to assess the relative merits of various foreign digital platforms, focusing on their functionalities, user-friendliness, opportunities for student-teacher interaction, and efficacy in facilitating independent student work. Through a deductive approach, these findings were contextualised within the broader theoretical frameworks of open educational environments and the organisation of independent student work. This process facilitated the formulation of guiding principles for the development of effective online learning platforms.

A systematic approach was employed to categorise the collected data pertaining to a diverse array of foreign digital platforms, their functionalities, and their potential applications in facilitating independent student learning. The resultant findings were meticulously organised into tabular formats to highlight the key attributes of these platforms. Subsequently, a process of generalisation was undertaken to derive overarching conclusions regarding the significance and efficacy of foreign digital platforms within open educational environments in fostering independent student work. These conclusions were drawn from a comprehensive analysis of the accumulated data.

This research endeavour was conducted in a multi-phased approach. The initial theoretical stage involved a comprehensive review of existing scholarly literature on the research topic, culminating in the precise definition of key concepts and the underlying theoretical framework governing the integration of digital platforms into education. The subsequent analytical phase entailed a meticulous examination and analysis of a diverse array of foreign internet platforms, delving

into their functionalities and distinctive features. The third stage, systematisation, focused on the meticulous organisation and categorisation of the collected data pertaining to these platforms, resulting in the creation of comparative tables and visual representations. The fourth and final stage, generalisation, involved the formulation of conclusions regarding the efficacy of various platforms, the identification of their respective strengths and weaknesses, and the development of recommendations for their effective utilisation. The concluding phase encompassed a comprehensive discussion of the research findings, a contextual analysis of the obtained data within the framework of contemporary educational trends, and a thoughtful consideration of both the potential benefits and limitations of employing internet platforms to facilitate independent student work.

Results

To qualify for inclusion in the category of digital learning platforms, the product must:

- be intended for use by teachers of K-12 schools (which refers to the sum of primary and secondary education in the United States, covering grades from kindergarten to 12th grade, typically for students aged 5-18 years old) or higher educational institutions;
- conduct interactive educational lessons;
- include multimedia or gamification elements designed to increase student engagement;

- personalise the learning process for each student;
- create reports based on student performance data.

When organising independent work, it is necessary to take into account the characteristics of students, such as:

- each student builds their own future with the teacher's support;
- the purposes are set with the help of the teacher, but the work plan is compiled solely by the student;
- in accordance with the teacher's tasks, the student plans the purposes of future activity;
- the work is performed at the request of the students, they understand the content, plan, and perform tasks without the help of a teacher.

Independent student work exerts a significant influence on the acquisition, organisation, quality, and applicability of knowledge and skills. Consequently, it is imperative to integrate individual study, knowledge assimilation, and assessment within a cohesive learning framework. S. Dhawan (2020) underscores the multifaceted nature of learning in contemporary knowledge societies, characterised by a diverse range of contexts and methods that encompass both formal and informal, intentional and incidental learning experiences. This complexity is visually represented in the accompanying diagram (Fig. 1).

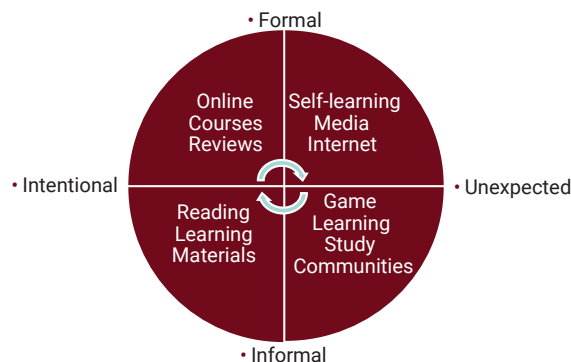


Figure 1. Methods of learning

Source: compiled by the authors

The synthesis of high-quality teaching in an online environment is described in detail in the study of G. Marinoni *et al.* (2020), evaluating three types: cognitive, social, and educational (Table 1). These three elements form the foundation of effective online learning experiences. The cognitive aspect focuses on the intellectual

processes involved in learning, including critical thinking, problem-solving, and knowledge construction. Social interaction is crucial in online environments to foster a sense of community and collaborative learning. The educational element encompasses the instructional design and facilitation aspects that guide the learning process.

Table 1. Educational interaction in the online learning environment

Elements	Categories	Indicators
Cognitive skills	Initiating event:	
	➤ research; ➤ integration; ➤ solution.	➤ a feeling of perplexity; ➤ information exchange; ➤ combining ideas.
Social interaction	➤ affective measurement; ➤ open communication; ➤ group cohesion.	➤ expression of emotions; ➤ free self-expression; ➤ teamworking.
Learning	➤ design and organisation; ➤ discursive study; ➤ clear guidance.	➤ establish the content of the programme and the methodology; ➤ create meaning together; ➤ concentrate the discussion.

Source: compiled by the authors

Every component within this framework is indispensable in crafting a holistic and captivating digital learning environment. Cognitive abilities are cultivated through thoughtfully constructed activities that stimulate critical thinking and the application of acquired knowledge. Moreover, the platform fosters social interaction by providing a range of communication tools and collaborative projects, thereby enabling learners to benefit from peer-to-peer learning and cultivate a collaborative learning community. The educational aspect ensures that the course is structured effectively, with clear objectives and appropriate guidance to help students navigate the learning materials (INTEF, 2017). By integrating these three elements, online learning platforms can create a rich, interactive environment that supports deep learning and student engagement. This holistic approach recognises that effective online education goes beyond simply delivering content and instead focuses on creating meaningful learning experiences that promote active participation and knowledge construction (Table 1). These three elements and their interaction create an environment

for analysing educational interaction in an online learning environment. It is necessary to find a place for the intersection of innovation and research practice in distance education. This issue was considered in the study of K. Anwar & M. Adnan (2020), researchers discovered that the development of appropriate tasks and the evaluation procedure are crucial for the involvement of students in the learning management system. To foster effective learning, digital learning environments should be designed to meet institutional quality standards, including certification requirements and accessibility features. Digital learning involves an educational break, since it causes a sharp change in support and methods, but since it is gradually gaining a place among conventional formats, the authors of the study M. Suresh *et al.* (2018) identified more than 20 factors that accelerate the development of distance independent education: openness, flexibility, ubiquity, self-control, spontaneity, etc. L. Garcia-Aretio's (2017) research offers a set of guiding principles and conclusions for designing robust online learning programs and platforms, as detailed in (Table 2).

Table 2. Principles of Internet platform development

Principles	Design implications
Active participation	The teaching staff can participate in the creation and offer new ideas or learn from experience
Using the practice and previously obtained knowledge	The teaching staff can analyse and extract valuable experience from their practice, work, and data of their colleagues and offer it for implementation
Evaluation of expected results	The programme coordinators present and propose new guidelines for action
Respect and satisfaction towards students	programme models influence the learning environment in which employees and students feel valued and respected

Source: compiled by the authors based on the research materials of S. Dhawan (2020)

Digital learning platforms serve as effective frameworks for structuring the educational process, facilitating optimal content organisation and student interaction. These platforms are widely adopted by educational institutions, particularly at the university level (Survey on online and distance learning, 2020). In the context of virtual instruction, it is imperative to leverage the unique characteristics of the digital environment and adapt courses and disciplines accordingly. Learning platforms emerge as virtual spaces that catalyse educational innovation and professional growth, emphasising personalised learning experiences

and collaborative approaches. In the realm of distance and independent learning, the learning platform should be meticulously aligned with the knowledge and practices of virtual environments, thereby enhancing the efficacy of the educational process, fostering autonomous learning, and facilitating seamless interaction with educators in completing educational tasks and utilising communication tools (Moreno *et al.*, 2017). The accompanying article presents a visual representation of student navigation processes, offering valuable insights into student behavior and informing the design of effective virtual courses (Table 3).

Table 3. Student navigation processes

Process	Description
Understanding	Overview of the course structure All parts/areas of the course are clear and accessible
Learning	Logical organisation of the course Easy access to course components
Functional	The links for the course work properly The course content has been verified

Source: compiled by the authors based on the research materials of G. Marinoni (2020)

The rapid advancement of technology has spurred a proliferation of diverse online learning platforms, each tailored to meet specific pedagogical requirements (Yuriychuk & Dadak, 2024). As a result, these platforms have become essential tools for both educators and learners, revolutionising traditional classroom experiences and fostering more dynamic and interactive learning environments. To provide a comprehensive overview of the options available, Table 4 presents a curated list of

some of the most widely used and popular online education platforms. This collection highlights a variety of platforms spanning different educational levels and disciplines. From K-12 to higher education, these platforms offer a variety of functionality, including content delivery, assessment, communication, and collaboration tools. Table 4 describes the features and capabilities of these platforms, which provided an understanding of their potential impact on teaching and learning processes.

Table 4. *Online platforms for education*

Name	Description
Canvas	With the open, convenient cloud technologies, the platform provides easy integration of educational materials, tools, and services that teachers and students need. In addition to the training management system, a repository of training objects, a customisable universal catalogue of courses, a registration system, and a payment gateway are offered.
Coursera	The platform provides universal access to the best education in the world, in partnership with leading universities and organisations, offering free courses for everyone.
Khan Academy	The platform provides a flexible learning environment that accommodates diverse learning styles, offering a rich array of resources such as practical exercises, instructional videos, and personalised learning dashboards. These features empower learners to progress at their own pace, both within and beyond the traditional classroom setting.
Nearpod	By incorporating dynamic media and assessment tools, the platform enables educators to design lessons that foster active student engagement.
GoReact	Designed to support formative assessment, this interactive platform provides students with the tools to collaborate, receive personalised feedback, and demonstrate their learning through various media. By enabling teachers to provide targeted feedback using customizable rubrics and annotations, the platform promotes ongoing skill development and enhances student engagement.
Discovery Education Inc	As a leading provider of standards-aligned digital resources for students up to the age of 12, this platform is revolutionising education through a comprehensive suite of digital textbooks, multimedia content, professional development opportunities, and a robust online community for educators.
McGraw-Hill Connect	By providing a comprehensive suite of learning resources and adaptive technologies, this platform empowers students to take ownership of their learning. The platform's flexible design encourages exploration and experimentation, allowing students to make mistakes in a low-stakes environment and develop practical skills. The platform automatically evaluates assignments and tests, providing the teacher with easy-to-read reports for making recommendations. Moreover, the platform allows combining all the course materials in one place, creating a digital version of the course textbook.
Renaissance Accelerated Reader	This comprehensive reading program is designed to cultivate a lifelong love of reading in students aged 12 and under. By providing access to a vast library of over 200,000 fiction and nonfiction texts at various reading levels, the program empowers students to make independent reading choices and engage in sustained, independent practice. The collection of articles provides additional opportunities for daily reading of scientific literature, and detailed reports support regular conversations between teachers and students about reading time, reading comprehension, and reading development.
Lumio by SMART Learning Suite	Designed to enhance accessibility and adaptability, this digital tool enables teachers to create engaging and interactive learning experiences that can be accessed from any device. By allowing for the seamless conversion of a variety of digital resources, including PDFs, Google Slides, and PowerPoint presentations, the platform supports diverse teaching and learning styles. The platform saves time by creating lessons quickly and sending them to students' devices via Google or Microsoft. This powerful learning tool helps students actively explore, create, collaborate, ask questions, and reflect while participating in lessons on their devices, in the classroom, or at home. It also gives students a choice of the way they learn, making it visible to teachers and other students. The unique ability to support group work and collaboration makes the platform a dynamic and versatile tool for conducting exciting and effective lessons using students' devices.
Blackboard Ally	This user-friendly digital platform empowers learners to personalise their educational journeys, providing flexible and accessible learning opportunities anytime, anywhere.
Pear Deck	A platform for creating vivid, interesting, and interactive lessons, presentations, and grading to interest every student.
TechSmith Knowmia	This innovative asynchronous video platform is designed to enhance student engagement and improve learning outcomes in online and blended courses. The platform's intuitive interface allows educators to easily create and deliver engaging video content, while interactive features such as video quizzes and threaded discussions foster active participation and meaningful interaction. By integrating with learning management systems and providing secure access across multiple devices, the platform ensures a flexible and effective learning experience for students.

Table 4. Continued

Name	Description
Kaltura Video Cloud	This versatile video platform is tailored to meet the diverse video content management needs of organisations across industries. As a leading video cloud solution, the platform offers a broad spectrum of tools and features to facilitate efficient and effective video workflows.
Vedamo Virtual Classroom	This user-friendly platform offers educators a seamless solution for creating dynamic and interactive virtual classrooms. Requiring no additional software installation, the platform empowers teachers to design engaging lessons with features such as gamification, real-time student monitoring, and customizable templates. By eliminating technical barriers, the platform enables educators to focus on delivering high-quality instruction.
MindTap	With this platform, there is no need to search for markers and notebooks, since it makes it possible to highlight and take notes on the Internet directly on web pages.
Kiddom	Kiddom is a versatile educational platform that streamlines the learning process by integrating curriculum, assessments, and communication tools into a single, accessible interface. By offering both customizable and pre-built curriculum options, Kiddom empowers educators to create engaging and effective learning experiences that cater to the needs of diverse learners, regardless of the learning environment. On this platform, teachers can easily adjust the volume and sequence of classes in accordance with the needs of the discipline or class. Teachers and students do not need to leave the platform to record video and audio, assign, view, complete, or evaluate lessons, there is an opportunity to view reports in real-time or communicate in many ways.
NoRedInk	The No Red Ink platform trains qualified writers through a programme based on interesting, adaptive exercises and practical tasks.
Freckle	By offering a rich array of interactive features, including team-based projects, real-world scenarios, and immediate feedback, this adaptive software significantly enhances student engagement and achievement. Designed to support differentiated instruction, the platform enables educators to tailor learning experiences to meet the unique needs of each student. Aligned with K-12 standards, the software provides a robust foundation for academic success across various disciplines.
myON Reader	Designed to foster literacy skills and cultivate a love of reading, this digital platform provides students with a vast repository of engaging texts in multiple languages. By incorporating multimedia elements, interactive tools, and a diverse range of content, the platform creates a dynamic and personalised reading experience. The platform's alignment with literacy standards and its integration with subject area lessons ensures that students develop the essential skills necessary for academic success.
Mentoring Minds	Aligned with K-12 educational standards, this comprehensive learning management platform is designed to enhance student achievement by promoting deep learning and critical thinking. The platform's customizable features allow educators to create engaging and effective learning experiences that cater to the diverse needs of their students. The "ThinkUp!" module, specifically designed for elementary school students, equips learners with the essential skills required to succeed in a complex and rapidly changing world. The reporting and analytics block is aimed at creating, managing, administering, and tracking data from standard-compliant tasks and assessments. The assessment management block "Itematica!" can meet the needs of students and teachers in the context of assessment – it is a comprehensive assessment solution with access to more than 65,000 assignments based on standards of state learning purposes.

Source: compiled by the authors based on the research materials of K. Anwar & M. Adnan (2020)

Based on the above, it should be established that the analysis conducted in the study presented a comprehensive description of the landscape of digital learning platforms. It was possible to characterise their main components that define these platforms, emphasising their role in modern education. Central to this research was the importance of personalisation, interactivity, and

data-driven approaches in creating an effective learning environment. It highlighted the evolution of education from traditional teacher-centred models to more flexible, student-centred paradigms facilitated by technology. By examining a variety of platforms, the study found a diverse ecosystem that offers a range of features and capabilities to meet a variety of educational

needs. Ultimately, it was found that successful integration of digital learning platforms requires a careful balance of pedagogical principles, learner characteristics, and technological alignment. In addition, it was emphasised that this complex interaction is crucial for maximising the potential of these platforms and achieving optimal learning outcomes.

Discussion

When technologies are integrated smoothly and thoughtfully, students not only become more interested but also begin to have better control over their learning. Effective technical integration changes the dynamics of classroom learning by encouraging student-centred project-based learning. In an era of digitisation and globalisation, teachers need to think about how they use technology with their students. Do they apply technologies in the classroom on a daily basis, using various tools to complete tasks and create projects that demonstrate a deep understanding of the content? If the teacher's answer is negative, the causes for this need to be addressed: insufficient access to technology, the teacher's ill-preparedness, lack of additional support in the class. Depending on the answer, the path to technical integration may differ, but it can successfully occur in any class. Teachers frequently succeed when they provide an opportunity to use technology in the classroom. The use of technologies for educational purposes gives various advantages and effects, but some may argue that not all effects are positive. The endless flow of information and entertainment available at any given time can be considered a distraction, but if the technology is integrated into a classroom with established procedures that are monitored or evaluated, the advantages of using technology in the classroom outweigh the disadvantages.

Active participation of students is a key part of any lesson plan. Regardless of whether students work independently or collaboratively, technology attracts students because it is interactive. Not all students learn and remember information in the

same way or at a similar speed. Technology is an opportunity for teachers to differentiate learning in order to change information in accordance with the learning abilities of their students. The use of technology can also allow students to work at their own pace. Technologies have become an independent form of literacy due to their active use in everyday life. Many professions use at least one aspect of Microsoft Office or Google software every day: balancing budgets in spreadsheets, creating presentations or slide shows, or attaching documents to emails to convey important information. Learning and practising these skills by students will prepare them for life outside the classroom. The multifaceted nature and versatility of electronic independent learning hold the potential to significantly enhance the educational process. Nevertheless, to optimise its impact on student interaction and academic outcomes, educators and learners must strategically integrate this modality into the teaching and learning paradigm. P. Holzweias *et al.* (2014) posit that the efficacy of e-learning is contingent upon three key factors:

- teacher engagement: educators who effectively utilise digital tools to facilitate learning can foster meaningful interactions with students, cultivate a supportive learning environment, and creatively engage learners;

- student connection: given the potential for isolation in virtual learning environments, educators must proactively establish connections and build relationships with students to mitigate feelings of disengagement;

- technological infrastructure: the effectiveness of e-learning is also contingent upon the quality and suitability of the technological infrastructure employed.

Educational institutions should actively support the integration of online systems and platforms into their academic programs. As outlined by D. Babu & D. Sridevi (2018), effective online programs must incorporate principles of flexibility, learner-centred design, inverted classroom approaches, inclusivity, scalability, efficiency, and profitability. The design of online courses should

prioritise intuitive navigation, ensuring that students can effectively utilise links and interactive elements to engage with both instructors and peers. M. Sadeghi's (2019) research highlights the positive impact of online learning on student perception, as collaborative activities and knowledge-sharing opportunities foster a meaningful and engaging learning experience. The teaching-learning process, in conjunction with the learning platform, necessitates a diverse range of communication components, including masterclasses, knowledge presentations, and interactive questioning. O. Karintseva *et al.* (2020) emphasise the critical role of teacher communicative competence in facilitating effective educational processes. The utilisation of learning platforms addresses the unique requirements of independent and distance learning by providing opportunities for task creation, tailored material presentation, and the integration of virtual and traditional resources (Tejedor *et al.*, 2021).

The integration of internet platforms into traditional educational settings fosters a dynamic and interconnected learning environment that involves teachers, students, and subject matter. As highlighted by Y. Rizvi & A. Nabi (2021), fostering interaction among these key components is essential for promoting mediated learning. These platforms transcend the limitations of physical space and time, motivating learners, educators, and diverse groups while providing a rich array of learning opportunities. Comparative studies between in-person and online learning have consistently demonstrated the effectiveness of online modalities, particularly for students who may struggle to participate actively in traditional classroom settings. Unlike traditional education, independent online learning has gained prominence due to its flexibility and accessibility, offering learners the freedom to access educational resources at their convenience. This modality plays a pivotal role in enhancing the educational process by enabling personalised and adaptive learning experiences, fostering interaction and collaboration, and empowering students to learn

at their own pace while engaging in meaningful discussions and knowledge exchange.

Comparative studies consistently highlight the efficiency and cost-effectiveness of online learning, which eliminates the need for physical commuting and provides access to readily available, up-to-date educational materials. Moreover, research examining the perceptions of students and teachers regarding e-learning has revealed that accessibility is widely regarded as a key advantage, surpassing other factors such as student orientation, flexibility, and collaboration (Guerreiro *et al.*, 2021). While e-learning offers numerous benefits, it is essential to acknowledge potential drawbacks. Online learners may face challenges such as distractions, decreased concentration, and missed deadlines due to the virtual nature of the learning environment. Moreover, access to technology, including reliable internet connectivity and computers, is a prerequisite for effective e-learning, and technical difficulties can disrupt the learning process. For students, the self-directed nature of online learning can sometimes lead to decreased motivation due to the time and effort required for organisation. Additionally, the absence of physical interaction with peers and instructors can contribute to feelings of isolation. From a health perspective, prolonged screen time associated with online learning can increase the risk of vision problems, back pain, and reduced physical activity (Kim *et al.*, 2020). A comprehensive analysis of the literature reveals that while online learning offers certain advantages, exclusive reliance on this modality may diminish some of these benefits and amplify existing challenges. Students often report difficulties in information assimilation, concentration, and teaching effectiveness when learning exclusively online. Furthermore, presenting seminar projects in a virtual environment can be daunting for some students, who may fear public speaking and judgment from their peers. Even students who were actively engaged in face-to-face seminars may find it challenging to express their opinions or participate in online discussions due to feelings of vulnerability.

The challenges outlined in the research by S. Eze *et al.* (2020) align with the difficulties encountered by students in online learning environments. The lack of effective teaching strategies that foster concentration and engagement can contribute to student distractions and decreased focus. Additionally, environmental factors, such as noise and inadequate learning spaces, can further hinder concentration during online studies. Another significant disadvantage is the feeling of isolation that can arise from reduced face-to-face interaction, particularly with instructors. As highlighted by N. Morris *et al.* (2020), students often perceive online learning as less valuable than traditional classroom instruction, preferring a blended approach that combines both modalities. Furthermore, students may perceive online learning as less effective in terms of information assimilation and processing, potentially leading to diminished academic outcomes. While these challenges exist, the study suggests that the effectiveness of online learning can be significantly influenced by the quality of instruction and the suitability of course content. By adopting appropriate teaching methods and selecting well-designed courses, educators can mitigate the drawbacks of online learning and create a positive and productive learning experience.

A critical factor to consider is the extent of interaction between students and teachers within the online learning environment. As revealed by this study, students may experience a sense of isolation due to limited interaction with both peers and instructors. While e-learning platforms often incorporate video conferencing capabilities, these sessions may be constrained by scheduling limitations and small group sizes. Nonetheless, video conferences play a vital role in bridging the gap created by the absence of face-to-face interactions. To compensate for reduced personal communication, some educators effectively leverage team projects and collaborative learning tools. Students generally express a positive sentiment towards utilising the platform for independent study, recognising its value as a learning resource.

However, technical challenges arising from institutional servers can sometimes lead students to opt for third-party platforms. When selecting online platforms, students prioritise features that enable extended video communication among multiple participants, minimise technical difficulties, and facilitate seamless interaction with both peers and instructors.

As outlined by the Technology Adoption Model (Spirin *et al.*, 2022), the adoption of e-learning platforms is influenced by the user-friendliness and perceived usefulness of the tools they provide. The findings of this study indicate that students encountered minimal difficulties when utilising the tools offered by these platforms, highlighting their intuitive and accessible nature. To further integrate internet platforms into the educational landscape, it is imperative to enhance existing tools and establish seamless integration with commonly used student and teacher applications. Social media platforms, such as Facebook, Snapchat, and Twitter, have become an integral part of contemporary communication and interaction. These platforms enable individuals to stay connected, informed, and engaged with the world, while also fostering creativity and personal expression. A significant number of educators recognise the value of social media as a means to expand their professional networks and access valuable resources. Given the ubiquitous nature of social media in students' daily lives, leveraging these platforms within the classroom emerges as a strategic approach to enhance the interactivity of the educational process and foster deeper engagement (De Moura *et al.*, 2021).

The integration of technology into education presents a paradigm-shifting opportunity to enhance teaching and learning practices. While the studies reviewed underscore the numerous advantages of technology, including increased student engagement, personalised learning, and expanded access to information, successful implementation necessitates careful consideration and deliberate efforts from various educational stakeholders. Key factors identified in the

discourse include robust teacher training, equitable access for all learners, and judicious selection of appropriate technological tools. Moreover, the research underscores the importance of a balanced perspective that acknowledges both the benefits and challenges inherent in online learning environments. To fully capitalise on the potential of technology, educational institutions must strategically invest in infrastructure, professional development, and research initiatives to ensure its seamless integration into the curriculum. By doing so, they can create innovative and effective learning experiences that equip students with the skills necessary to thrive in the digital age.

Conclusions

Based on the results of this study, conclusions can be drawn both at the practical and theoretical levels. On a practical level, the study offered a number of actionable recommendations for educators to improve the quality of online learning. Despite significant progress in addressing technical challenges in educational institutions, persistent problems with Internet connectivity, signal loss, and access to appropriate digital devices continue to hinder students, especially those living in rural or economically disadvantaged areas. To address these disparities, schools and universities must implement targeted programs aimed at bridging the digital divide and ensuring equitable access to educational opportunities for all students.

It found that to effectively navigate the evolving educational environment, it is necessary to implement targeted curricula that equip educators with the skills necessary to adapt to

the transformative potential of online learning. raising awareness of the key role of technology in shaping the future of education is essential, emphasising a paradigm shift toward innovative student-teacher interactions. It was noted separately that teachers who are characterised by openness, flexibility and a desire for self-development are more likely to take an independent approach to professional growth and actively seek to improve their teaching methods. However, some teachers may resist the use of new technologies in the classroom, relying solely on the basic functions of e-learning platforms and following traditional teaching practices. Within the educational ecosystem, it has been identified that there is a reluctance of some educators to seek support in using specific platform tools, possibly due to concerns about recognising knowledge gaps. While technical prowess is undoubtedly important, educators must also possess the pedagogical skills necessary to adapt their teaching methods to the unique demands of the online environment. Future research should delve into the effective integration of artificial intelligence technology into the educational context, with a particular focus on strategies for organising students' independent work.

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Інтернет-платформи у відкритому освітньому середовищі в організації самостійної роботи студентів

Василь Дудар

Кандидат історичних наук, доцент
Університет Григорія Сковороди в Переяславі
08401, вул. Сухомлинського, 30, м. Переяслав, Україна
<https://orcid.org/0000-0001-6064-9408>

Вячеслав Різник

Кандидат педагогічних наук, доцент
Університет Григорія Сковороди в Переяславі
08401, вул. Сухомлинського, 30, м. Переяслав, Україна
<https://orcid.org/0000-0002-6083-2242>

Віталій Коцур

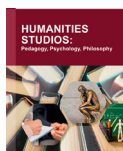
Кандидат політичних наук, доктор історичних наук, професор
Університет Григорія Сковороди в Переяславі
08401, вул. Сухомлинського, 30, м. Переяслав, Україна
<https://orcid.org/0000-0001-6647-7678>

Володимир Носаченко

Кандидат педагогічних наук, доцент
Університет Григорія Сковороди в Переяславі
08401, вул. Сухомлинського, 30, м. Переяслав, Україна
<https://orcid.org/0000-0003-0266-5199>

Анотація. В епоху оцифрування та інформатизації відкриті освітні ресурси та технології є невід'ємним елементом навчальної інфраструктури, починаючи від подкастів і закінчуючи електронними бібліотеками, підручниками та іграми. Метою дослідження було вивчення різних інтернет-платформ у відкритому освітньому середовищі, призначених для самостійної роботи студентів. Для цього було використано методи аналізу, синтезу, порівняння, дедукції, систематизації та узагальнення. У результаті проведеного дослідження було виявлено широкий спектр інтернет-платформ, які роблять процес навчання інтерактивним та цікавим. Встановлено, що провідні позиції у світі займають міжнародні ресурси, багато з яких можуть бути перекладені на більшість поширених мов. Під час дослідження було проаналізовано основні платформи, їх переваги та недоліки. Отримані результати свідчили про те, що освітні ресурси постійно розвиваються, створюються нові, що дозволяє кожному вчителю знайти відповідний інструмент для впровадження у власний освітній підхід. Встановлено, що використання цих цифрових платформ значно покращує залучення студентів до освітньої системи та сприяє розвитку самоспрямованого навчання. Результати цього дослідження є цінною інформацією для викладачів вищих навчальних закладів, яка може дозволити їм оптимізувати структурування самостійної роботи студента. Крім того, ці результати можуть бути використані розробниками освітніх програм для бездоганної інтеграції інноваційних технологій у педагогічний процес. Зрештою, самі студенти можуть отримати користь від цього дослідження, вдосконалюючи свої стратегії самостійного навчання.

Ключові слова: освітня діяльність; технології в освіті; інтеграційна діджиталізація; мережева модель



Professional motivation of future agrobiologists as a pedagogical issue

Oksana Prytyka*

Postgraduate Student

National University of Life and Environmental Sciences of Ukraine

03041, 15 Heroiv Oborony Str., Kyiv, Ukraine

<https://orcid.org/0009-0006-9327-4677>

Abstract. The study substantiated the relevance of researching the professional motivation of future agrobiologists in the context of contemporary environmental, economic, and social challenges, which significantly influence the quality of specialist training in the agricultural sector. This article aimed to examine the pedagogical factors affecting the development of professional motivation among agrobiological students to enhance their professional training. To achieve this aim, causal analysis and surveys were employed, ensuring a comprehensive approach to studying the issue. The findings indicated that professional motivation is a complex socio-psychological construct that determines the quality of professional development among future specialists. Key factors influencing students' motivational sphere were identified, including an awareness of the significance of their chosen profession, the organisation of educational and cognitive activities, engagement in practical work, the creation of a positive learning environment, and lecturer support. The study established that both internal and external factors significantly influence the formation of motivation. Internal factors include students' awareness of the significance of their chosen profession, interest in the field of study, and aspiration for professional development. External factors encompass the organisation of the educational process, the creation of a positive learning environment within the institution, engagement in practical activities, and lecturer support. The study analysed the characteristics of fostering sustained motivation for professional training, which facilitates the development of students' personal potential and enhances independence, creativity, and self-improvement skills. Such motivation increases their readiness to tackle complex professional challenges, improves the efficiency of the educational process, and contributes to the advancement of agricultural education as a whole. The practical significance of the study's findings lies in their potential application within the educational programmes of higher agricultural institutions and their use in developing pedagogical models aimed at fostering motivation for professional activity.

Keywords: socio-psychological process; professional training; specialist preparation; education

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*Corresponding author



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Introduction

At the current stage of Ukraine's agricultural sector's economic development, and amidst the challenges posed by war, there's a significantly increased demand for professionals who possess a new approach to their work. These professionals need a higher level of professional knowledge and skills, along with the ability to solve complex problems in the most efficient ways. Added to these difficulties is the necessity to address food-related issues in a context where a portion of agricultural land cannot be utilised due to war-related damage (mined territories, areas under shelling, and occupied regions). Furthermore, the global economic crisis and worldwide environmental problems must also be considered. The key figure capable of contributing to the resolution of these outlined problems is the modern agricultural sector specialist, whose professional training requires substantial changes in the approaches to preparing such professionals.

The study of what drives human behaviour has a long history, with early researchers on this topic including prominent ancient thinkers such as Aristotle, Heraclitus, Democritus, Lucretius, Plato, Socrates, and others. For a considerable period, philosophers, educators, and scholars from various fields of knowledge sought to answer the question of what constitutes the motivational source of human behaviour. They offered different answers at different times, attributing the source of motivation to factors such as reason, consciousness, or human will. For a long time, reason and will were considered the primary determinants of motivation, while other factors were dismissed as incapable of influencing it. The impact of both the external environment and the human body's condition was denied, although researchers sometimes had to make compromises, acknowledging that, in rare cases, emotions and passions could hinder a person's rational actions.

As the worldview and dominant scientific paradigm evolved, so too did perspectives on the nature of motivation. Eventually, both academics and practitioners agreed that motivation is a

crucial factor in any goal-oriented action. Due to this surge of interest, motivation has remained a top topic in various areas of public life for several decades. Pedagogy is no exception (Stryzhak & Grynova, 2022). Analysis of the literature indicates an increased focus on motivation in learning over the past 20-30 years. For instance, N. Carroll *et al.* (2011) conducted a comprehensive analysis of the main motivational factors that influence students in agricultural specialisations. This study is based on empirical data collected from agricultural faculty students and includes both quantitative and qualitative analysis methods. The authors emphasise that key determinants of motivation include the ability to apply acquired knowledge practically, interactive teaching methods, and the connection between the educational process and future professional activities. Additionally, the study highlights the role of mentorship and collaboration with agricultural business representatives in shaping students' professional motivation.

In their study, J. Parrella *et al.* (2023) examine the impact of the educational environment on the motivational aspects of student learning. The authors emphasise that in the current stage of agricultural sector development, the development of so-called "soft skills" plays a significant role in shaping competitive professionals. These skills include communication abilities, leadership qualities, teamwork skills, and strategic decision-making. The study highlights the necessity of implementing an interdisciplinary approach to educational programmes, which would foster students' deep understanding of the interrelationship between economic, social, and technological aspects of agricultural activity. Authors J. Siebert *et al.* (2006) analyse the correlation between academic achievement, socialisation processes, and student motivation levels. According to their findings, students who actively participate in educational and professionally oriented activities (internships, practical placements, conferences) demonstrate higher levels of academic motivation and achieve better learning outcomes.

The authors particularly stress the importance of involving students in practical activities during their studies, which not only improves their material comprehension but also shapes the professional identity of young specialists.

Analysis of scholarly sources indicates that student academic motivation is the result of a complex interplay of factors. Among these, the practical application of knowledge, active learning methods, the development of professional competencies, and socialisation play crucial roles (Tiwen, 2023). Optimising educational programmes through the integration of interactive methods, expanding opportunities for professional practice, and fostering collaboration with industry professionals will contribute to enhancing students' academic motivation. The implementation of an interdisciplinary approach and the expansion of practical learning opportunities will enable the development of highly qualified specialists capable of effectively adapting to the demands of the modern job market (Kupchak & Samilo, 2020; Onipko & Yaprynets, 2024). These studies underscore the importance of a comprehensive approach to fostering the professional motivation of future agrobiologists. The educational environment, the integration of modern technologies, practical experience, emotional support from lecturers, and cultural aspects are key elements that determine the effectiveness of student motivation for learning and subsequent professional activity. Considering these factors in the educational process promotes the development of highly motivated and professionally oriented specialists, which is vital for the modern agricultural sector. This study aimed to analyse the problem of forming the professional motivation of agrobiology students in the face of contemporary challenges and to identify ways to improve the effectiveness of their professional training.

Materials and Methods

To achieve the stated aim, a range of scientific methods were employed in the research, enabling the acquisition of well-founded results and

ensuring their reliability. The method of scientific source analysis was used to investigate the theoretical foundations and empirical aspects of professional motivation among students in agrobiology specialisations. A detailed analysis of 25 scholarly sources was conducted, including monographs, articles in peer-reviewed scientific journals, legislative acts, and findings from international studies. Particular attention was paid to studies that highlight the correlation between the level of educational motivation and the effectiveness of students' professional training. The analysis of literary sources allowed for the identification of the main theoretical approaches to the problem of professional motivation, the determination of its key factors, and the identification of existing issues in this field.

Methods of citation and bibliographic analysis were used to systematise the obtained data, provide their scientific interpretation, and build a bibliographic database for the research. Structured documentation of information was carried out, which made it possible to confirm the relevance of the chosen topic and ensure the reliability of the scientific conclusions. The use of citations and references allowed for the representation of existing approaches to the problem of professional motivation in global and domestic scholarly thought, facilitating the development of well-reasoned recommendations. Causal analysis was aimed at identifying cause-and-effect relationships between the level of students' professional motivation and the quality of their educational training.

The primary empirical research method employed was a survey of first-year students in the Agronomy specialisation at the National University of Life and Environmental Sciences of Ukraine. The study was conducted from 15 September 2023 to 15 September 2024. A total of 100 students participated, answering 20 questions related to their choice of specialisation, the definition of educational goals, motives for enrolling in the university, and the influence of external (family, environment) and internal (personal interests,

career aspirations) factors on their professional choice. The survey was conducted following the Ethical Code of the Scientist of Ukraine (Institute of Educational Analytics, 2023): respondents provided informed consent to participate, and the data obtained was anonymised to ensure confidentiality. In addition to closed questions, the questionnaire included open-ended questions, allowing for the collection of qualitative data on students' individual motivational factors.

The survey (Table 1) covered the following aspects: the respondent's place of residence before enrolment; the main reasons for choosing the Agronomy specialisation; key sources of motivation for studying; the level of awareness about the specialisation before enrolment; the

formation of professional expectations; main educational goals; the most influential factors in choosing a career path; plans for employment after graduation; the presence of family traditions in the field of agronomy; changes in professional orientations during the first year of study; evaluation of the quality of the educational process; the adequacy of practical training; the level of interest in scientific research; factors that may cause a change in professional priorities; attitudes towards international career prospects; the role of modern technologies in the field of agronomy; important personal qualities for successful professional activity; support from lecturers and administration in professional development; suggestions for improving the learning process.

Table 1. Survey questions for students

Question	
1	What was your place of residence prior to enrolment (city/village, region)?
2	Why did you choose the Agronomy specialisation?
3	Who or what most influenced your choice of specialisation (family, teachers, friends, personal interest, other)?
4	Do you have a clear understanding of your future profession?
5	How well-informed were you about the Agronomy specialisation before enrolment (on a scale of 1 to 5)?
6	What is your main goal after obtaining your degree (employment, own business, research, other)?
7	What motivates you most to study at university (interest in subjects, employment prospects, scholarship, other)?
8	Do you plan to work in your specialisation after graduating from university?
9	Do you have relatives who work in the field of agronomy or agriculture?
10	Has your attitude towards your chosen specialisation changed during your studies? If so, how?
11	How do you rate the quality of teaching at your university on a scale of 1 to 5?
12	Do you feel there are enough practical classes and field studies in your curriculum?
13	Which disciplines do you find most interesting? Why?
14	Do you participate in scientific research or student projects in agronomy?
15	What factors might make you change your professional path (lack of prospects, low salaries, change of interests, etc.)?
16	Are you considering the possibility of working abroad in the field of agronomy?
17	In your opinion, how much do modern technologies influence the agronomic field?
18	What personal qualities do you think are most important for a successful agronomist?
19	Do you feel supported by lecturers and administration in your professional development?
20	What changes in the curriculum would you suggest to improve the training of future agronomists?

Source: created by the author

Comparative analysis was used to compare the research results with similar scholarly research by Ukrainian and foreign authors. This allowed for the identification of general trends

and unique characteristics of student professional motivation in the field of agronomy. Statistical analysis was used to process the survey data. The percentage distribution of respondents' answers

was determined, which made it possible to identify the main trends in the formation of student professional motivation. Methods of synthesis and generalisation were used to integrate the obtained data to form generalised conclusions, which became the basis for developing recommendations to increase the level of professional motivation among students in agricultural specialisations. Content analysis was conducted to qualitatively analyse respondents' answers to open-ended survey questions. This allowed for the identification of key motives, personal priorities, and factors influencing students' professional choices.

Results and Discussion

Analysing student motivation

for learning in higher education institutions

The National Doctrine of Education Development (2002) places particular emphasis on cultivating a worldview and positive motivation for learning. These guidelines become especially significant against a backdrop of generally declining motivation for education, particularly among university students. The motivational component is one of the most crucial elements of any educational process, and it takes on central importance in professional training. The learning process in higher education institutions involves changes to the motivational aspect of students' professional preparation, and the simultaneous development of theoretical and practical foundations helps to address the issue of forming professional motivation among agrobiological students. Motivation has been the subject of numerous pedagogical and psychological studies. However, attention has primarily focused on: 1) learning motives, the overall structure of the motivational sphere, mechanisms of motivation, the dynamics of motive development in different age groups, and methods of forming comprehensive motivational complexes under the influence of various factors; 2) the study of positive and negative motivational factors in cognitive activity, related to social and personal factors.

Motivation is a complex psychological process that drives human behaviour, directing it towards achieving specific goals and determining the intensity and duration of effort. In the context of education, motivation is considered a key factor that ensures effective knowledge acquisition, the development of practical skills, and the formation of professional competencies. A. Maslow (1943), in his theory of the hierarchy of needs, defined motivation as the process of satisfying basic (physiological, safety) and higher-level (self-actualisation) needs. He emphasises that in educational settings, higher motivation for learning is achieved by creating conditions for students' self-actualisation, where they feel their knowledge is valuable for professional and personal development.

Professional training represents a "special" type of education, as it aims not only to integrate theory with practice but also to develop professional skills in current and potential employees, which are necessary for performing specific types of work. The Law of Ukraine No. 1556-VII "On Higher Education" (2014) defines professional training as "the acquisition of qualifications in a relevant field of study or specialisation". The goal and final outcome of professional training are to prepare students for their future professional activities. However, it is important to remember that no outcome in any learning process (especially in professional training) can be achieved without motivation. This research focuses not on motivation in general but on the motivation of future agrobiologists towards their professional training.

V. Korneschuk & T. Fedirchuk (2018) state that professional training is a targeted process of developing the knowledge, skills, abilities, qualities, and practical experience in future specialists that are necessary for successfully addressing the tasks of professional activity. Often, students choose an educational institution for a variety of reasons that have nothing to do with choosing a specialisation based on vocation. According to various student surveys, it becomes clear that the vast majority of students and prospective

students have a rather vague understanding of their professional career prospects (Kharkiv Polytechnic Institute, 2023). This situation is the result of errors in the national educational strategy. Ministries and institutions involved in the educational process in the country recognise the existence of problems. This is evidenced by the declared objectives of the “new” education system – enhancing professionalisation and developing personality (National Doctrine of Education Development, 2002). However, the lack of real state support for the education system, the absence of genuine educational reforms, the lack of respect for teaching work, the lack of motivation among lectures themselves, and so on, lead to the neglect of motivational factors in student learning activities, and these factors largely determine the process of shaping the personality of the future specialist.

The system of training specialists in higher education institutions must change along with the school and vocational pre-higher education systems. This requires a focused, systematic effort from all participants in the educational process – from ministries that influence the strategy of the national educational process to students and their parents, who ultimately become both the customers and consumers of educational services. The outdated Ukrainian education system, in its essence, provides little to no motivation for acquiring knowledge. For a long time, there have been attempts to “repackage” school education, vocational pre-higher education, and higher education without changing the post-Soviet essence of this education. Often, students simply spend time in educational institutions, perceiving the process of acquiring knowledge as an unpleasant burden in addition to socialising with peers. For example, it is common to hear students express the opinion that, out of all the information learned over twelve years of schooling, which can easily be found on the internet, very little will be useful in life. Over twelve years of education, the school system, built on the paradigm of industrial production, almost nullifies a child's intuition and creativity.

In addition to the many problems inherited from Soviet education, new ones have emerged. Over the past five years, Ukrainian education has faced significant negative objective factors (the pandemic, the war), which have affected the quality of knowledge among schoolchildren and, consequently, among university students. Thus, at the end of 2023, the results of an important international educational study, PISA-2022 (Ministry of Education and Science of Ukraine, 2023), which is conducted every three years, were released. Ukraine first participated in this study in 2018 – before the pandemic and after four years of being essentially at war. As of early 2025, the war in Ukraine continues, and a large number of educational institutions continue to operate in extremely difficult conditions, providing the educational process. Therefore, it can be assumed that there has been no significant improvement in the situation over the past year. According to the Organisation for Economic Co-operation and Development (OECD), Ukrainian 15-year-old students lag behind their peers from other member countries by 2.5 years in reading and 1.5 years in mathematics and science (Ministry of Education and Science of Ukraine, 2023). Therefore, student motivation for learning is a complex and multifaceted phenomenon that requires a comprehensive approach and continuous improvement.

Survey results on students' professional motivation

In a study dedicated to the formation of professional motivation among future agrobiologists, attention was paid to the situation in school education, as the problem of low motivation for learning in higher education institutions does not suddenly arise upon transitioning from school to university. It was established that the problem is part of a broader situation in the education system, which includes higher education. When asked about their future profession, students tended to give fairly uniform answers: some chose a profession that would bring the highest earnings, others opted for a profession where their parents could

help them find a job, and yet another group responded that it doesn't matter where they study, as long as they get a diploma, have social interactions, and enjoy student life.

A survey conducted among first-year students of the Agronomy specialisation at the National University of Life and Environmental Sciences of Ukraine (NULES) from 15 September 2023 to 15 September 2024 revealed that 57% of respondents have only a general understanding of their chosen profession (Fig. 1). This result indicates the need for further in-depth familiarisation of students with the specifics of agronomic activities and their practical aspects, which is an important stage in the formation of professional motivation and orientation of future specialists.

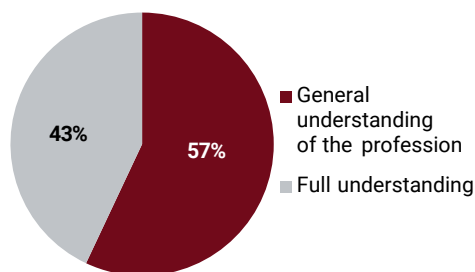


Figure 1. Do you have a clear understanding of your future profession?

Source: created by the author

According to the survey results, the majority of first-year students chose their future profession under the influence of various factors. Specifically, 70.5% of respondents indicated that their choice of specialisation was significantly influenced by family and relatives, highlighting the importance of family influence in the process of young people's professional self-determination. 15% of respondents stated that their decision was influenced by books and participation in various research projects, demonstrating the role of literature and scientific practices in shaping professional interests. 13% of students indicated that their choice of specialisation was influenced by teachers, emphasising the significance

of pedagogical influence in the process of professional orientation. Only 2% of respondents cited other factors (Fig. 2).

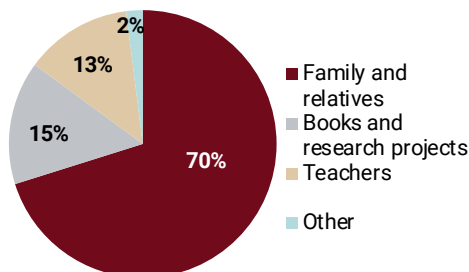


Figure 2. Who or what most influenced your choice of specialisation (family, teachers, friends, personal interest, other)?

Source: created by the author

Regarding the goals of which students enrolled in this specialisation, the results also revealed diverse motives. 41% of respondents identified their main goal as future financial security, indicating a pragmatic approach to career choice. 46.5% of respondents stated that their goal is to become highly qualified specialists, indicating an orientation towards professional development. 11% of respondents indicated that they enrolled in the specialisation solely to obtain a diploma, which may indicate a lack of awareness regarding the importance of professional self-determination. Only 1.5% of students indicated that their motive was the desire to socialise with peers and make new acquaintances in the student environment.

To the question "Why did you choose the Agronomy specialisation?" (Fig. 3), 50% of respondents answered that this specialisation, in their opinion, offers good career opportunities; 35% because they love nature; 7% and 8% because they want changes and innovations in this field. This situation has arisen from a combination of many factors, both external and internal. External factors include the rapid change in social and scientific processes (in just a few decades, humanity has transitioned from an industrial society to a digital one, creating specialisations that could

not even be imagined yesterday); changes in the way information/knowledge is obtained; changes in the value priorities of modern society; and the gap between the national education system and the needs of modern society and industry, among others. In addition to social factors, global environmental problems, pandemics, and wars are increasingly making themselves felt. All of this has inevitably influenced changes in internal motivational factors, such as a fundamental shift in the interests and values of modern individuals, a change in personal perceptions of the prestige of certain professions, different emotional responses to external factors, and so on.

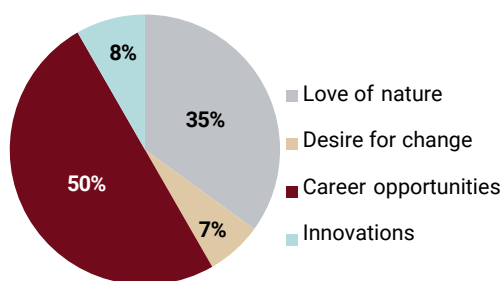


Figure 3. Why did you choose the Agronomy specialisation?

Source: created by the author

Therefore, the study of motivation for professional training is becoming one of the central themes of modern pedagogy in higher education. This primarily concerns professions that have become relevant in the contemporary world, emerging as a response to the demands of modern society. Such professions include agrobiolgy, whose task is to solve humanity's food problems while considering the current precarious ecological situation on the planet. The emergence of this specialisation demonstrates that the scientific community in general, and specialised experts in particular, have come to understand that it is impossible to unconditionally alter nature without considering its delicate internal symbiotic organisation. And here lies the greatest challenge in the professional training of future agrobiologists – preparing individuals with yesterday's orienta-

tions and, in some cases, knowledge, for tomorrow, advocating for changes in the very approach to interacting with nature and persuading them to become, in a sense, a Buddhist of agronomy.

Applicants who apply specifically to this specialisation have at least some understanding of the “special” lifestyle they aspire to or have directly lived in such conditions since childhood. It is difficult to imagine that a former student from a modern million-plus city high school, specialising in mathematics and computer science, would suddenly want to radically change their life after graduation. In any case, the vast majority of applicants to the Agrobiolgy specialisation are already familiar with this lifestyle. This is evidenced by the results of a survey conducted among first and second-year students of the Agrobiolgy specialisation at NULES from 15 September 2023 to 15 September 2024. 71% of respondents lived in rural areas before entering university, while 29% were city residents, of which only 6% lived in large cities, with the rest living in cities with a population of no more than 50,000 people. According to PISA-2022 data (Ministry of Education and Science of Ukraine, 2023), “students from rural areas lag behind their peers from large cities in reading by almost five years, in science subjects by four years, and in mathematics by more than four and a half years of schooling. This gap can likely be explained by differences in the socioeconomic status of students living in different types of areas.”

As previously mentioned, students entering the Agrobiolgy specialisation at NULES are predominantly recent residents from rural areas, where the level of knowledge is lower compared to graduates of urban lyceums and gymnasiums. However, there is a positive aspect in that the majority of those entering this specialisation are from rural areas, as they at least have some familiarity with living conditions outside the city and the specifics of agricultural work. Having chosen agrobiolgy, these former students undertake significant work to understand the prospects that their specialisation will provide. Then the learning process begins at the university, where

the student's success, the depth and strength of their knowledge, which will further help in their development as a future agrobiologist, depends on their motivation. Moreover, it is important to emphasise that professional motivation often plays a compensatory role, as "in conditions of insufficiently developed abilities, a student with professional motivation can achieve greater success than a capable student who lacks professional motivation." To reinforce this point, it can be noted that the renowned American cognitive psychologist R. Sternberg (2019), who spent several decades studying the possibilities of predicting success in various achievements using intelligence tests, concluded that motivation is just as important in achieving success as intellectual abilities.

Based on the structure of learning activities, it becomes clear that alongside structural components such as goals, subject content, knowledge, learning actions, etc., motivation forms a component of the framework of this structure. Learning activity, in its process, must generate internal motives in the subject, on which the results and effectiveness of learning often depend, and in professional training, the effectiveness of the future specialist as well. If, during the learning process, it is possible to form a stable motivation for learning the future profession in those who are studying, then such learning activity causes changes in the subjects themselves.

Strategies for enhancing professional motivation in agrobiology students

According to O. Tkachenko (2018) and A. Kurbatova (2021), the majority of educational researchers in the professional development of agricultural university students highlight the following stages in the process of professional training: fostering positive motivation to master the future profession; organising educational and cognitive activities; and organising the transition from students' learning activities to the practical application of their acquired theoretical knowledge. Thus, fostering positive motivation to master the future

profession is the very first stage in the professional training of a future agrobiologist.

Equally significant in professional training, according to T. Zatkova (2020), is the stage of organising educational and cognitive activities and creating conditions for the formation of a creative personality in the higher education student. Another important aspect of professional training is ensuring the transition from students' learning activities to the practical application of their acquired theoretical knowledge (Jaklová Dytrtová *et al.*, 2008). First and foremost, it is crucial to transform students' cognitive motives into professional ones, which, in turn, creates conditions for the full, adequate, and conscious development of the future agrobiologist. The early years of study in any specialised university are the most challenging from a motivational perspective, as students' motivation for professional training is actively formed in the later years of study when professionally oriented disciplines appear in the curriculum and students undertake practical placements (Rymešová & Kolman, 2010; Pavlova, 2018).

A study by CEDOS (2016) on the socio-economic profile of students highlights important aspects of youth motivation when choosing a place of study. One of the key factors is intrinsic motivation – interest in the specialisation – but extrinsic factors also play a significant role: financial opportunities, university prestige, territorial accessibility, and social connections (studying with friends). For the Ministry of Education and Science of Ukraine, such studies are important as they help shape educational policies that promote the recruitment of motivated students. The choice of specialisation and educational institution also depends on the availability of information, advice from parents and teachers, and prospects for future employment (Lviv National Environmental University, 2019). These data are relevant to the topic of professional motivation among future agrobiologists, as they indicate the need not only for high-quality teaching of specialised disciplines but also for actively fostering interest in

the field through career guidance activities, providing information about career prospects, and addressing the financial aspects of education.

Motivation for professional training involves the integration of incentives related to educational and professional activities, based on the mutual transformation of cognitive and professional motives. As M. Lakatosh (2021) notes, the realisation by future agrobiologists during their studies of the necessity of knowledge for successful mastery of the profession and for navigating various situations in professional activities creates a need for higher education students to master professional skills and abilities. Work aimed at fostering the motivation of future agrobiologists for professional training allows students to be encouraged towards self-development and self-improvement, which subsequently influences the formation of personality and the unlocking of their creative potential, and develops in future specialists a desire for continuous improvement of professional knowledge.

Conclusions

The results of the conducted research have established that the formation of professional motivation among future agrobiologists is a key element in their preparation for professional activities. The analysis of surveys conducted among students showed that the majority of them chose the specialisation with insufficiently formed ideas about their future profession. Among the main motivational factors identified are the prospects for professional growth, the possibility of obtaining well-paid employment, and the desire to contribute to solving global environmental problems.

The study demonstrated the importance of considering the specifics of an agrobiologist's work when developing educational programmes. The profession requires the integration of theoretical knowledge and practical skills, a willingness to work in rural areas, adaptation to seasonality, and the ability to perform tasks in the context of modern environmental, economic, and social challenges. It was found that effective motivation

formation requires a comprehensive approach that encompasses both internal and external factors. Internal factors include the realisation of the significance of future professional activities and their impact on personal development, while external factors include career advancement opportunities, participation in research activities, and the implementation of innovations in the education system. Targeted efforts by lecturers to increase student interest create favourable conditions for the development of students' independence, ability for self-development, and professional realisation. A significant role of professional motivation also lies in compensating for insufficiently developed abilities and knowledge, allowing for the achievement of high results even in the face of initial learning difficulties. The use of interactive teaching methods, digital technologies, and interdisciplinary approaches contributes to increasing the level of professional training for students.

The further development of the issue of forming professional motivation among agrobiology students can encompass several important directions. Firstly, it is crucial to study the dynamics of motivation formation at different stages of learning, which will allow for the identification of critical moments that require additional attention from lecturers and educational institutions. An important task is to develop methods for diagnosing students' motivational spheres, which will allow for the assessment of its impact on the results of professional training. This approach will enable the identification of problematic aspects at the early stages of learning and the prompt implementation of corrective measures. The analysis of the impact of innovative educational technologies, including digital tools and virtual simulations, on the development of motivation for professional activity is also promising. The use of such tools can increase student interest in learning and improve the assimilation of educational material. Special attention should be paid to the development of integrated curricula that consider the current challenges of the agricultural sector. In particular, there is a need to adapt the

educational process to conditions of environmental instability, taking into account the specifics of the activities of future agrobiologists. In addition, it is advisable to develop recommendations for lecturers on improving educational strategies aimed at forming students' professional motivation. This may include approaches to creating a favourable learning environment, developing practically oriented methods, and using interdisciplinary tools. The results of this study can serve as a basis for further improving the system of training

future agrobiologists, contributing to increasing the effectiveness of their professional education.

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Conflict of Interest

None.

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Професійна мотивація майбутніх агробіологів як педагогічна проблема

Оксана Притика

Аспірант

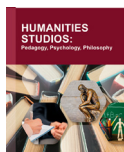
Національний університет біоресурсів і природокористування України

03041, вул. Героїв Оборони, 15, м. Київ, Україна

<https://orcid.org/0009-0006-9327-4677>

Анотація. У роботі обґрунтовано актуальність дослідження професійної мотивації майбутніх агробіологів у контексті сучасних екологічних, економічних та соціальних викликів, що значно впливають на якість підготовки фахівців для аграрного сектору. Метою статті було дослідити педагогічні чинники, які впливають на розвиток професійної мотивації студентів-агробіологів, з метою покращення їх професійної підготовки. Для досягнення мети використано методи каузального аналізу, анкетування, що забезпечило комплексний підхід до вивчення проблеми. У результаті дослідження встановлено, що професійна мотивація є складним соціально-психологічним конструктом, який визначає якість професійного становлення майбутніх фахівців. Було виявлено ключові чинники, що впливають на мотиваційну сферу студентів, серед яких усвідомлення значущості обраної спеціальності, організація навчально-пізнавальної діяльності, залучення студентів до практичної роботи, створення позитивного навчального середовища та підтримка викладачів. У результаті роботи було встановлено, що на формування мотивації значно впливають як внутрішні, так і зовнішні чинники. Внутрішніми чинниками є усвідомлення студентами значущості обраної професії, інтерес до спеціальності та прагнення до професійного вдосконалення. Зовнішні чинники включають організацію навчального процесу, створення позитивного середовища у закладі освіти, залучення до практичної діяльності та підтримку викладачів. Проаналізовано особливості формування стійкої мотивації до професійної підготовки, яка забезпечує розвиток особистісного потенціалу студентів, сприяє формуванню самостійності, креативності та здатності до саморозвитку. Така мотивація підвищує їхню готовність до вирішення складних професійних завдань, сприяє підвищенню ефективності освітнього процесу та розвитку аграрної освіти загалом. Практична значущість результатів дослідження полягає у можливості їх впровадження в освітні програми аграрних закладів вищої освіти та використання для розробки педагогічних моделей, орієнтованих на формування мотивації до професійної діяльності

Ключові слова: соціально-психологічний процес; фахова підготовка; підготовка спеціалістів; навчання



Relevance of teaching social psychology in the training of psychologists

Taisa Yamchuk*

PhD in Psychology, Associate Professor
Mukachevo State University
89600, 26 Uzhhorodska Str., Mukachevo, Ukraine
<https://orcid.org/0000-0003-0392-2249>

Abstract. This study aimed to determine social psychology's impact on future psychologists' training, considering students' performance during practical placements. The methodology included an analysis of the key features of the Social Psychology course, a comparison of the results of experimental and control groups after completing practical placements, a pedagogical experiment conducted with students in the clinics MindCare Clinic, Dobrobut, and Psychology Hub, as well as a Strengths, Weaknesses, Opportunities, and Threats analysis. The study examined the teaching of Social Psychology at Mukachevo State University and assessed the effectiveness of interactive teaching methods. A pedagogical experiment was conducted with two groups of psychology students: the control group focused on studying documents and theoretical materials, whereas the experimental group actively applied practical methods, such as case studies, role-playing, and training sessions. The analysis of the obtained data indicated that students in the experimental group demonstrated a higher level of professional competence, enhanced communication skills, and the ability to work effectively in real social-psychological situations. The findings confirmed that the use of interactive methods in teaching social psychology contributes to better material retention, the development of practical skills, and an overall increase in students' professional readiness. A comparative analysis revealed that students in the experimental group exhibited greater success in applying theoretical knowledge in practice, particularly in areas such as employee motivation and the management of social interactions. A key factor in this was the provision of feedback from clinic supervisors and the use of modern technologies for communication between lecturers and students. The results obtained may be utilised in the development of new approaches to teaching social psychology, particularly the integration of motivational systems into the learning process

Keywords: specialist training; critical thinking; modern technologies; practical tasks; skills enhancement

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*Corresponding author



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Introduction

Social psychology plays a pivotal role in the training of future psychologists, as it facilitates an understanding of the mechanisms of human interaction within society, the influence of social factors on behaviour, and decision-making. It not only equips professionals with the necessary knowledge to work with individuals and groups but also fosters the development of critical thinking, emotional intelligence, and communication skills, which are essential for successful professional practice. A significant number of researchers have explored this topic, highlighting various perspectives. T. Kolomiets *et al.* (2023) investigated innovative technologies in the professional training of psychologists in European Union countries and the potential for their adaptation in Ukraine. They analysed contemporary educational approaches, including the use of digital technologies, interactive teaching methods, dual education, and practice-oriented programmes employed in European universities, and outlined the prospects for their implementation in the education system. The research by O. Didenko *et al.* (2024) addressed the issue of training future psychologists who meet the demands of the labour market in wartime and post-war conditions. They examined the challenges faced by the education system during wartime, including insufficient resource provision, the psychological state of students and lecturers, the necessity to adapt curricula to crisis conditions, and the implementation of distance learning, and proposed ways to improve educational programmes following contemporary requirements.

Furthermore, V. Panok (2024) explored the challenges of professional training for psychologists within the context of the development of Ukrainian psychology in the 21st century. The author analyses contemporary challenges and trends in psychological education and proposes directions for its improvement in response to societal demands. He identified issues in the professional training of psychologists, including the inadequacy of educational programmes to meet contemporary challenges, insufficient practical

training for students, a low level of interdisciplinary integration, and the need to update the content of education in line with societal demands. L. Rudenko & N. Bidiuk (2020) examined the problems of professional training for psychologists in higher education institutions. They investigated the main difficulties associated with the development of competencies in future specialists and substantiated the necessity of updating curricula per contemporary requirements.

In his book, R. Biswas-Diener (2024) explored the foundations of social psychology, including theories, methods, and the application of social psychological principles in the study of interpersonal relationships, attitudes, and social norms. D. Campbell & A. Reiman (2022) considered how public opinion perceives the realism and implications of social psychological research, and discussed the challenges facing contemporary social psychology. P. Chen *et al.* (2022) evaluated the real-world effectiveness of social psychological interventions transferred from controlled settings to classrooms. They focused on examining how these interventions can be effectively implemented in the educational process and what outcomes they produce in real-world learning environments. The results of the study demonstrated that social psychological methods, when applied in classrooms, are capable of improving interpersonal interactions among students, enhancing levels of emotional support, and reducing stress levels within groups.

One of the key challenges in higher education is the utilisation of new technologies to enhance the learning process, and in this context, H. Crompton *et al.* (2020) explored the psychological foundations of new technologies for teaching and learning in higher education, specifically examining the role of technology in student motivation and the improvement of the learning process. S. Dunsmuir *et al.* (2023) conducted research on the pre-qualification training of educational psychology consultants in the United Kingdom, focusing on the quality and effectiveness of this

training. A persistent issue in education is addressing inequalities, and M. Easterbrook & I. Hadden (2020) investigated the potential of social psychology in overcoming educational inequalities, emphasising identity and learning contexts.

The preparation of psychologists and educators for working with diverse social groups requires in-depth theoretical knowledge. M. Eronen & L. Bringmann (2021) discussed the crisis of theories in psychology and the pathways for the development of social psychology, particularly in the context of educational interventions. N. Grunberg *et al.* (2021) applied classical principles of social psychology to improve the performance of medical teams, which also has relevance for psychology in educational settings. There are gaps in the research on the impact of technologies on different types of future psychologists, considering their psychological characteristics. Additionally, the influence of socio-psychological theories on creative disciplines, cultural differences in the perception of social processes, the impact of social context on the motivation of students with diverse social experiences, and the adaptation of socio-psychological interventions to real-world learning environments have not been sufficiently studied.

This study aimed to examine the role of social psychology in the training of future psychologists, specifically through the analysis of student performance during practical activities. The objectives of the study were to assess the impact of interactive teaching methods on the level of material comprehension in social psychology among students, the influence of individualised learning approaches on the development of professional skills in future psychologists, and develop recommendations for improving social psychology curricula in universities, considering the needs of students and the demands of contemporary professional practice.

Materials and Methods

The study analysed the teaching of the Social Psychology course for future psychologists at Mukachevo State University. Specifically, the features

of the course structure, its stages, the development of competencies, and the incorporation of interactive methods were examined. Two groups of future psychologists participated in the pedagogical experiment: the experimental group and the control group. The experimental group consisted of 30 participants. The control group also had 30 participants. The sample was representative, as participants were selected based on criteria that considered academic level. Participants were selected on a voluntary basis from among students studying social psychology, with consideration given to practical activities. The study was conducted in 2024, from March to June, with stages of data collection and analysis of results. The research was conducted at several psychological centres and consultancy practices where students undertook practical placements, namely the psychological centre MindCare Clinic, the specialised psychotherapy centre Dobrobut, and the consultancy centre Psychology Hub, where diverse approaches to staff motivation were practically demonstrated. These centres were selected due to their specialisation in various areas of psychological assistance, including crisis counselling, psychotherapy, rehabilitation after traumatic events, work with children and adolescents, family counselling, and support for individuals with post-traumatic stress disorder, as well as their utilisation of contemporary psychotherapy methods, such as cognitive-behavioural therapy, Gestalt therapy, existential therapy, and neuro-linguistic programming techniques. These institutions provided students with the opportunity to gain practical skills in interacting with patients and colleagues, analysing real-world situations, and applying knowledge of social psychology in the areas of motivation and management. The study was conducted in several stages: the selection of centres; the division of future psychologists into two groups (control and experimental); data collection (evaluation of the importance of key motivational factors on a scale from 1 to 10, where 1 represents minimal importance and 10 represents maximum importance); and the analysis

of results (the obtained data were analysed to determine the effectiveness of the implemented motivational system).

During their practical training, students in the control group focused on studying clinical reports, consultation protocols, and therapeutic intervention plans related to socio-psychological activities in the clinics. Students in the experimental group worked according to a developed programme titled Development of Socio-Communicative Competencies of Future Psychologists: Interactive Methods and Practical Approaches.

This programme included participation in communication skills development workshops, social interaction simulations, and role-playing exercises aimed at conflict resolution and group dynamics management. A key component of the programme was the students' completion of case studies based on real-world situations encountered in the clinics. The study employed data collection through questionnaires (Table 1). The provisions of the American Sociological Association Code of Ethics (2018) were adhered to throughout the research.

Table 1. *Examples of questions included in the questionnaire*

No.	Questions
1	How easy do you find it to complete tasks related to social psychology?
2	Which aspects of studying social psychology do you find easiest? (e.g., theoretical knowledge, practical skills, analysis of social processes, etc.)
3	Do you feel that your ability to complete tasks in social psychology improves over time? (Yes/No)
4	Which teaching methods in social psychology do you find most understandable and easy to learn? (e.g., lectures, discussions, case studies, role-playing, etc.)
5	How do you rate your ability to apply the knowledge gained from social psychology in practice? (Rate on a scale from 1 to 10, where 1 = cannot do at all, 10 = can do without difficulty)

Source: *compiled by the author*

$M \pm SD$ represents the mean (M) and standard deviation (SD). The p-value indicated the statistical significance of differences between groups. A $p < 0.05$ indicated that the difference was statistically significant. A $p < 0.01$ indicated high statistical significance. Through student questionnaires during their practical placements, lecturers were able to provide feedback to students as needed. Feedback was provided via the Viber messenger application. Feedback was also gathered (in oral format with lecturers who assessed the effectiveness of teaching methods such as role-playing and group discussions) from clinic supervisors, which helped to create an accurate picture of which aspects of the social psychology curricula worked best and which required improvement. To reduce the subjectivity of feedback from lecturers and clinic supervisors, the following methods were employed:

- categorisation of feedback by key aspects (effectiveness of methods, development of skills);
- analysis of specific examples of the impact of methods on students during practical placements;
- contextualisation of feedback, taking into account the specifics of the clinics and student groups.

They evaluated students on a 10-point scale according to several criteria, namely the level of communication skills, the ability to resolve conflicts, the ability to work in diverse social groups, and the ability to apply theoretical knowledge in real-world situations. This process allowed students to understand their strengths and weaknesses, as well as to identify areas for further development. Based on the feedback, statistics were compiled, indicating the level of success in the academic and professional development of

student-future psychologists. Comparing the obtained results with student expectations helped to assess the effectiveness of existing teaching methodologies and identify potential areas for their improvement to enhance the level of training for future psychologists.

A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis was conducted to assess the strengths and weaknesses of existing programmes, including the methods, principles, and student activities incorporated within them, the teaching of social psychology, as well as the potential opportunities and threats affecting the learning process. A theoretical model for the training of future psychologists was created, and recommendations were developed for the integration of motivational systems into the social psychology curriculum in universities.

Results

The content of the social psychology course and its significance in the training of psychologists

The social psychology course is a component of the curriculum for students majoring in psychology, particularly at Mukachevo State University. This course aims to provide students with an understanding of the fundamental principles of social psychology, as well as to develop their practical skills for analysing and applying psychological knowledge in real-world contexts (Yamchuk, 2024). An important element of the course is its emphasis on the development of critical thinking, which enables students to evaluate social phenomena from various perspectives and apply theoretical knowledge to solve practical problems. Critical thinking in students is developed through the analysis of social situations, the discussion of conflicting viewpoints, and the evaluation of different approaches to problem-solving, which contributes to the formation of argumentation skills, informed decision-making, and information analysis. For instance, one exercise is "Analysis of a Social Conflict", where students are asked to consider a real or simulated situation (e.g., a conflict between employees in an

organisation due to uneven distribution of workload). They must identify the causes of the conflict, propose several options for its resolution, and justify the selection of the best strategy. Another task is "Debates on a Socially Significant Topic". Students are divided into two groups and prepare arguments for and against regarding, for example, the impact of artificial intelligence on the labour market or the ethics of advertising aimed at children. This helps them evaluate information from different perspectives, analyse sources, and develop public speaking skills. Such tasks allow students not only to formulate their own judgments but also to identify potential weaknesses in arguments, which contributes to more informed decision-making in their professional activities.

The course programme includes the study of both classical and contemporary approaches to social psychology. Classical approaches to social psychology encompass theories such as Bandura's social learning theory and Festinger's cognitive dissonance theory, which focus on the influence of social factors on behaviour. Modern approaches emphasise the integration of neuropsychological aspects, emotional intelligence, and the role of social media in shaping group identities and behaviour. A key theme is the examination of the impact of social context on individual behaviour, including the role of groups, authorities, social networks, and cultural aspects. Students study various models of social influence, such as conformity, obedience, and identification, and consider how social and cultural factors shape individual behaviour. Significant attention is also paid to the study of social stereotypes, prejudices, and discrimination, as well as methods for overcoming them in contemporary society.

The social psychology course emphasises the development of students' communication and interpersonal skills, which are essential for effective professional practice as a psychologist. To achieve this, various teaching methods are employed, including role-playing, group discussions, and practical training sessions. Role-playing is used to simulate real-world social situations, where

students can practise communication skills, make decisions, and analyse the behaviour of others. For example, the role-playing exercise “Negotiations in a Conflict Situation” allows students to practise mediation and conflict management skills. One group of students acts as company managers negotiating with employees on working conditions, while another group represents the employees’ interests. This helps students understand the processes of social interaction, develop active listening skills, and practise reasoned communication. Group discussions allow students to discuss social phenomena, ask questions, and express their opinions, which fosters the development of critical thinking. For example, during the discussion “The Impact of Social Media on Youth SelfEsteem”, students analyse how social platforms influence the formation of personal identity, comparing scientific research and their own experiences. Another group discussion, “Stereotypes and Prejudices in Contemporary Society”, is aimed at discussing the mechanisms of social stereotype formation and exploring ways to overcome them in the professional practice of a psychologist. Practical training sessions on conflict management or emotional intelligence allow students to apply theoretical knowledge in real-world situations, bringing them closer to professional practice. For instance, in the training session “Developing Empathy in Psychological Counselling”, students perform exercises on recognising emotions from non-verbal cues and learn effective techniques for supportive listening. Also, the training session “Psychological Resilience in Working with Crisis Clients” is practised, where participants learn to manage their own emotional state when communicating with clients in stressful situations.

Students had the opportunity to apply theoretical knowledge in practice, developing skills in working in groups, resolving conflicts, and interacting with people from diverse social contexts. In addition to theoretical knowledge, the course is also focused on the development of practical skills in the field of psychology. Students have the

opportunity to analyse social phenomena (such as the dynamics of group interaction, the formation of stereotypes, interpersonal conflicts, and social isolation) using social psychological research methods, such as questionnaires, interviews, observation, and experimental studies. They gain experience in conducting scientific research, developing research plans, and analysing the results obtained. This allows students not only to better understand social processes but also to develop critical thinking skills and a scientific approach to solving social problems.

The social psychology course at Mukachevo State University also includes the study of important social phenomena such as leadership, social groups, manipulation, intercultural communication, and the impact of mass media on society. In the teaching of social psychology, interactive teaching methods, such as role-playing, case studies, group discussions, and simulations of real-world social situations, facilitate active student engagement in the learning process and are used most frequently, as they allow for an increased level of material comprehension among students. Interactive methods are aimed at active student participation in the learning process, which allows not only the acquisition of knowledge but also the development of practical skills necessary for their future professional practice. In particular, case study technology involves the consideration of specific life or professional situations, which allows students to analyse social phenomena, identify their causes, and propose solutions. Within the framework of teaching social psychology, this could be the analysis of group conflicts, mechanisms of social influence, or the processes of stereotype formation.

Another effective technology is role-playing, which allows students to experience themselves in the role of participants in various social processes, such as negotiations, conflict resolution, or leadership in a group. Participation in such games allows students to better understand theoretical concepts, such as the dynamics of group interaction or social roles, and to gain practical

experience in simulating real-world situations. For example, during the role-playing game “Leadership Strategies in a Team”, students distribute the roles of manager, mediator, and executor in a group task, after which they analyse which management style was most effective. The method of group discussions allows students to express their own opinions, discuss different approaches to the analysis of social phenomena, and share their experiences. For example, during the discussion of the topic “Social Responsibility and Ethics of a Psychologist”, students analyse real ethical dilemmas that may arise in professional practice and propose possible solutions. Group discussions contribute to the development of critical thinking, the ability to argue one’s position, and the ability to work in a team.

In addition, project-based learning technology is important in the teaching of social psychology. It involves students completing complex tasks that combine theoretical knowledge with practical skills. For example, students might be asked to conduct research on social prejudices in a particular social group, using survey and interview methods, and then present the results in the form of a presentation or report. This approach allows students not only to assimilate theoretical material but also to gain experience in applying social psychological research methods in real-world settings. The use of digital technologies, such as interactive platforms like Kahoot, Mentimeter, or Padlet, also significantly increases the level of material comprehension. With these tools, lecturers can conduct surveys, and tests, or visualise complex concepts in a user-friendly format. For example, using Mentimeter, students can respond to questions in real-time or participate in creating collective mind maps, which promotes interactivity and a better understanding of the material. In particular, these tools allow students to be actively involved in the process, increasing their motivation and engagement. Using Kahoot for tests and surveys helps to make knowledge assessment more engaging and competitive, which stimulates students to

better assimilate the material. In Padlet, interactive walls can be created for collaborative work, where students can leave notes, share ideas, upload files, and comment on classmates’ posts, which promotes collective learning and knowledge exchange.

The role of practical training in clinics and psychological centres

Practical activity is a necessary stage in the development of real-world knowledge, skills, and abilities in future psychologists, which they acquire within the social psychology course. Theoretical knowledge is important, but it does not provide a complete understanding and mastery of professional competencies, which can only be fully acquired in the process of practical work. Applying theoretical concepts in real-world settings allows students to practise skills in solving specific psychological tasks, and develop the ability to interact effectively with diverse social groups and individuals, which is necessary for future professional practice. In clinics such as MindCare Clinic, the specialised psychotherapy centre Dobrobut, and the consultancy centre Psychology Hub, students had the opportunity to directly apply theoretical knowledge in real-world settings. In practice, students worked with real clients, applying the knowledge they had acquired to conduct consultations, and helping clients resolve personal problems and conflicts. They also performed therapeutic tasks, including working with emotional and behavioural disorders, and conducted analytical activities, assessing social processes and interpersonal interactions in the context of psychotherapy.

In each of these centres, students were provided with an individualised programme for the development of professional skills, which included active participation in group sessions, patient interviewing, and the application of psychotherapeutic techniques. At MindCare Clinic, students worked with psychotherapists, conducting preliminary assessments of patients’ conditions and assisting in the planning of further treatment.

They studied the fundamentals of cognitive-behavioural therapy, developing their skills to work with patients who had anxiety and depressive disorders. At the specialised psychotherapy centre Dobrobut, students had the opportunity to conduct short-term psychological consultations, work with diverse social groups and attempt to apply various approaches to resolving issues of stress or interpersonal conflicts. The consultancy centre Psychology Hub became a platform for the development of interpersonal communication and counselling skills, where students learned to analyse clients' psychological states, prioritise treatment, and maintain a positive atmosphere during consultations. This experience allowed students to evaluate various methods of working with clients and adapt them to individual needs, thereby developing professional skills in real-world settings.

A key aspect of effective learning in the experimental group was the use of an individualised approach, which included student self-assessment, feedback from lecturers, and personalised recommendations from clinic supervisors. This approach facilitated material comprehension and the development of specific professional skills necessary for future work in the socio-psychological field. Students in the experimental group regularly conducted self-assessments of their skills and knowledge. For example, after each training session or role-playing exercise, they completed reflective questionnaires, evaluating their own successes and difficulties in communicating with patients, managing conflicts, and analysing social situations. This allowed them to become aware of their own strengths and areas for further development. One student noted in their self-assessment that they found it difficult to manage group dynamics during conflict mediation between patients. Based on this analysis, lecturers developed individualised exercises for them to develop leadership qualities and group process management skills, which

helped them better prepare for future professional practice. They evaluated students' actions during simulations of social situations and real clinical cases, providing detailed recommendations for improving skills. For example, during a simulation of a crisis consultation, a student was unable to react quickly to the emotional state of a patient who was in distress. The lecturer drew attention to this aspect and suggested that she work further on methods of emotional regulation in stressful situations. Several weeks after a series of training sessions, her results improved, demonstrating the effectiveness of the personalised approach. In addition to lecturer evaluations, students received recommendations from the clinic supervisors where they completed their practical placements. This allowed them to adapt their learning to the real-world needs of the professional environment. In particular, one student, who demonstrated strong analytical skills during the analysis of social case studies, received a personalised recommendation to focus on developing counselling skills. They were offered additional tasks that included individual work with patients, which allowed them to better develop skills in effective communication and counselling.

Thus, in comparison to traditional university teaching methods, where students typically work with theoretical material and tests, practical placements in clinics allowed them to acquire deeper professional skills based on real-world social interactions. Interactive teaching methods in the experimental group significantly increased the effectiveness of knowledge acquisition and the development of professional competencies, such as communication, conflict management, and social situation analysis, which are extremely important for the future work of psychologists. To objectively assess the level of material comprehension, students' average scores before and after the implementation of interactive methods were analysed (Table 2).

Table 2. Level of material acquisition in the experimental and control groups before and after practical placements

Indicators	Before practical placements		After practical placements	
	Control group	Experimental group	Control group	Experimental group
Average score in social psychology (on a 10-point scale)	6.1	6.2	6.8	8.4
Self-assessment of communication competence (on a 10-point scale)	5.8	5.9	6.3	8.7
Ability to apply knowledge in practice (on a 10-point scale)	5.4	5.6	6.1	8.9

Source: compiled by the author

A comparative analysis of the learning outcomes of students in the control and experimental groups reveals a significant difference in the impact of traditional and interactive teaching methods on the level of material comprehension, the development of communication competence, and the ability to apply knowledge in practice. In the control group, where teaching was conducted using traditional methods, specifically through the analysis of documents, familiarisation with methodological recommendations, protocols, and examination records, students demonstrated only a slight improvement in their knowledge and skills. The average score in the discipline increased by 0.7 points, indicating gradual assimilation of theoretical knowledge. Students' communication competence increased by only 0.5 points, which is explained by insufficient engagement in realworld social interactions during the learning process. The ability to apply the acquired knowledge in practice improved by 0.7 points, indicating a limited level of practical experience, as the main focus was on working with documents rather than directly with social situations.

Overall, the results of the control group demonstrate that traditional teaching methods contribute to the development of a theoretical foundation, however, they do not provide sufficient practical training for students, which may affect their professional readiness to work in real-world settings. In contrast, students in the experimental group, who were taught using a programme that included interactive methods, such

as role-playing, communication training, social situation simulations, and case studies, demonstrated significantly higher results. The average score in the discipline increased by 2.2 points, indicating a deeper comprehension of the material due to active engagement in the learning process. Communication competence increased by 2.8 points, demonstrating the effectiveness of interactive methods in developing skills in communication, negotiation, and group dynamics management. The most significant improvement was observed in students' ability to apply knowledge in practice – this indicator increased by 3.3 points. This result is due to the fact that interactive methods allowed students to directly interact with real or simulated social situations, resolve conflicts, analyse social processes, and make informed decisions within a professional context.

To evaluate their own development during their practical placements, students conducted selfassessments of their knowledge, skills, and competencies acquired through the practical application of social psychology, as presented in Table 3. Self-assessment facilitated reflection, which helped students adapt their approaches and improve professional skills, particularly in the analysis of social processes and interaction in clinical settings. Furthermore, the results of the selfassessments allowed mentors and lecturers to provide individualised feedback, which helped to adjust the learning process and provide additional support where needed. Feedback from lecturers was aimed at helping students address

the difficulties they encountered when completing tasks, providing individual recommendations and strategies for improving results. Lecturers also adjusted teaching methods based on which one's students found most understandable and

effective, to optimise the learning process. In addition, they provided support in applying theoretical knowledge in practice, helping students develop the professional skills necessary for real-world practice.

Table 3. Survey results of the experimental and traditional groups based on questionnaire questions

Criterion	Experimental group (M ± SD)	Traditional group (M ± SD)	p-value
Ease of task completion (rating from 1 to 10)	8.0 ± 1.2	6.0 ± 1.5	p < 0.05
Easiest aspects of learning (most frequent response)	Practical skills and social process analysis	Theoretical knowledge (e.g., basic social psychology concepts)	-
Improvement in task performance ability (most frequent response)	Yes (due to constant application in practice)	Yes (due to repetition of theoretical material)	-
Most understandable teaching methods (most frequent response)	Role plays, case studies, discussions	Lectures, traditional seminars	-
Ability to apply knowledge in practice (rating from 1 to 10)	9.0 ± 1.1	6.0 ± 1.3	p < 0.01

Source: compiled by the author

The research results indicate significant differences in the perception of the learning process between students in the experimental and traditional groups. One of the key indicators was the ease of task completion: students in the experimental group rated this criterion on average at 8.0 points (± 1.2), while in the traditional group, this indicator was 6.0 points (± 1.5). The statistically significant difference ($p < 0.05$) indicates that interactive teaching methods, such as role-playing, case studies, and discussions, help students better understand the material and complete tasks with less difficulty. Regarding the easiest aspects of learning, students in the experimental group noted practical skills and the analysis of social processes, while in the traditional group, preference was given to the assimilation of theoretical knowledge. This aligns with the teaching methods in both groups: in the former, interactive approaches were actively used, which contributed to the development of practical competencies; in the latter, lectures and seminars provided a thorough understanding of theoretical foundations.

The study also found that in both groups, students noted an improvement in their ability to complete tasks, but the mechanisms of this

improvement differed. In the experimental group, this was explained by the constant practical application of knowledge, while in the traditional group, students performed tasks better due to the repetition of theoretical material. The most understandable teaching methods for the experimental group were role-playing, case studies, and discussions, which allowed them to actively interact and apply the acquired knowledge in simulated situations. In contrast, students in the traditional group preferred lectures and seminars, which corresponded to a more classic learning format focused on assimilating information through listening and note-taking. A significant difference was observed in the ability to apply knowledge in practice. The average score for this criterion in the experimental group was 9.0 points (± 1.1), and in the traditional group, it was 6.0 points (± 1.3). The statistically significant difference ($p < 0.01$) confirms that interactive teaching methods significantly better promote the development of practical skills and help students more confidently use the acquired knowledge in real-world settings. Students in the experimental group not only completed tasks more easily but also better assimilated the material, especially in

applied aspects. The statistically significant differences obtained highlighted the importance of implementing interactive methods in the learning process to increase its effectiveness and practical orientation.

Based on feedback from the supervisors of three clinics, an analysis was conducted that included evaluating students on several key criteria: level of communication skills, ability to resolve conflicts, ability to work in diverse social groups, and ability to apply theoretical knowledge in real-world situations. Clinic supervisors evaluated

each student on a scale from 1 to 10, providing detailed information about the strengths and weaknesses of the interns. A comparison of these results with students' expectations, who rated their ability to apply knowledge in practice at 7 out of 10, indicates the need for longer practical training. This leads to the conclusion that although students successfully grasped the fundamentals of social psychology, they need more time to develop skills in the practical application of the acquired knowledge in real-world situations, as confirmed by the SWOT analysis in Table 4.

Table 4. *SWOT analysis of the social psychology teaching programme*

Strengths	Weaknesses
Development of communication skills (average score 7.7/10)	Difficulties in applying theoretical knowledge in practice (average score 6/10)
Working in social groups	Limited integration of theory and practice
Use of interactive methods (role-playing, case studies)	A limited number of practical sessions
Opportunities	Threats
Expansion of practical sessions (real-world cases, clinical practice)	Rapidly changing professional requirements
Implementation of new teaching methods (modern technologies)	Low student motivation for practical work
Expansion of cooperation with clinics	Insufficient clinical placement opportunities

Source: *compiled by the author*

The SWOT analysis of the social psychology teaching programme revealed several key aspects that influenced the effectiveness of the learning process. Strengths included the development of students' communication skills and the use of interactive methods, which positively affected practical training. However, weaknesses were also identified, including insufficient application of theoretical knowledge in real-world settings and a limited number of practical sessions, which required improvement. Opportunities for improvement included expanding clinical practice and integrating new teaching methods, while threats such as rapidly changing professional requirements and limited access to clinical placements could complicate students' preparation for real-world practice.

To improve the training of future psychologists, a model was created (Fig. 1) that will be oriented towards the development of both theoretical knowledge and practical skills. This model should take into account not only the academic aspect of learning but also socio-psychological training, integration with real-world situations, and the development of critical thinking. Figure 1 presents a diagram of the stages of teaching social psychology, which includes five key stages. Each of them includes specific teaching methods, timeframes, socially oriented exercises, and expected outcomes. This structure facilitates the assimilation of material and the development of practical skills in the field of social psychology.

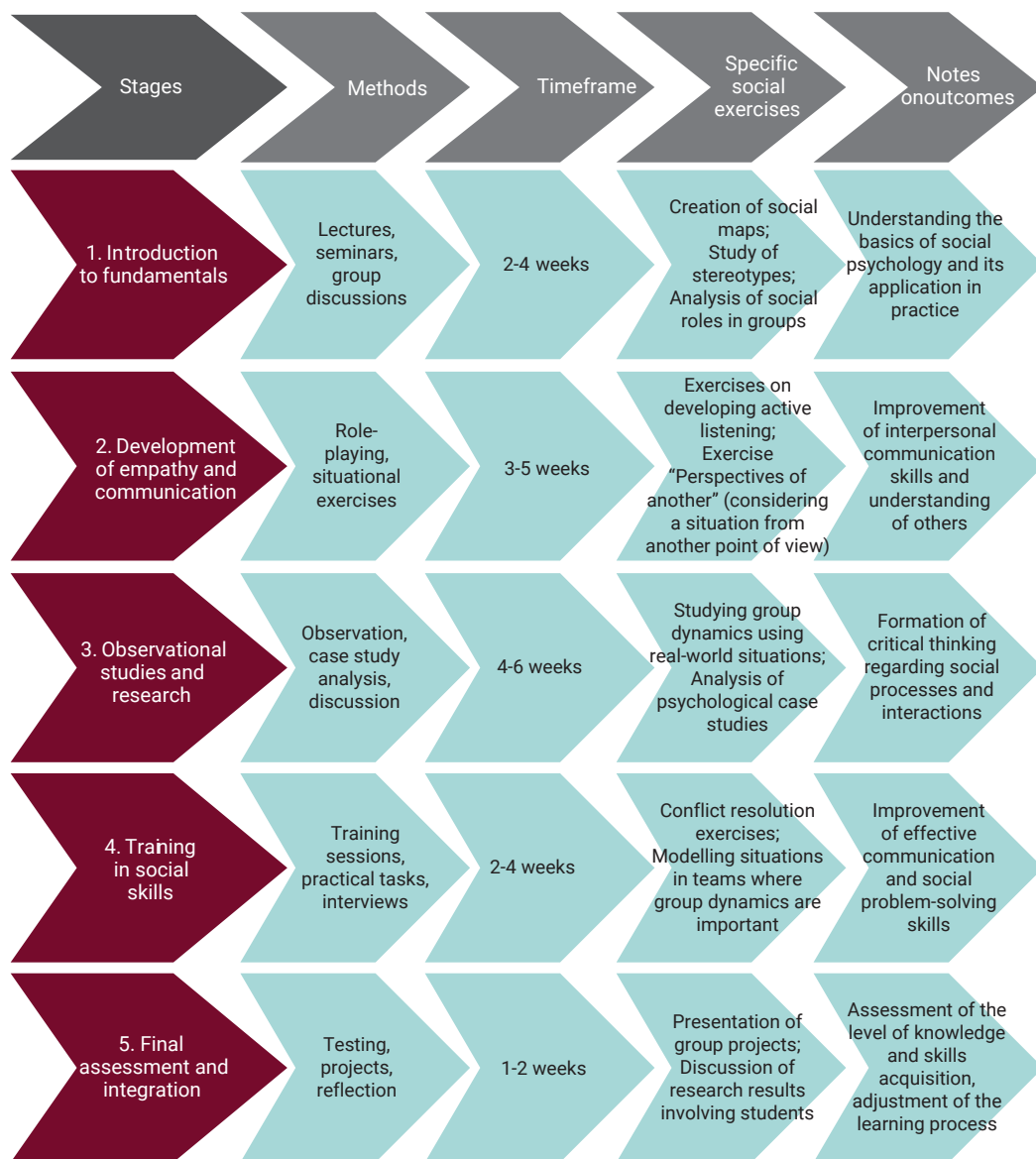


Figure 1. Stages of teaching social psychology

Source: compiled by the author

Recommendations for improving the teaching of social psychology in universities

It is important to highlight recommendations that yield results in conjunction with the use of a theoretical model. The most important aspect of social psychology for future psychologists is the integration of the learning process

with real-world practical experience, which can be gained through university collaboration with clinics, psychological centres, and other institutions that provide psycho-social assistance. To improve the training of future psychologists, it is important to establish close cooperation with specific clinics and psychological centres. For

example, universities can collaborate with mental health clinics, such as the Kyiv city centre for social, psychological, professional and labour rehabilitation Askold, which will provide students with the opportunity to complete practical placements, observe the work of professionals, and participate in real psychotherapeutic processes. Universities can also create joint projects with organisations such as the Coordination Centre for Mental Health, where students will gain experience working with diverse groups of clients, which will help integrate theoretical knowledge into practical activities. This provides students with the opportunity to gain practical experience working with real clients under the supervision of experienced specialists. For example, students can complete practical placements in mental health clinics, where they will have the opportunity not only to observe the work of professionals but also to participate in conducting psychodiagnostic research, psychotherapy sessions, and patient consultations. In addition, it is important to organise joint training sessions and seminars with practising psychologists, where students can acquire the necessary skills and knowledge that will help them confidently begin their professional practice after graduation. This allows students to learn about the latest trends and innovative methods in psychology, which will help them remain competitive in the job market.

In addition to practical training, it is also important to integrate motivational systems into the social psychology curriculum to enhance the effectiveness of the learning process. This will allow students to better understand not only the theoretical aspects of the discipline but also to develop intrinsic motivation for learning and professional development. One effective way to implement motivational systems is to introduce elements of gamification, where students receive certain rewards for achievements in learning, for example, in the form of additional points, certificates, or the opportunity to complete practical placements with highly qualified specialists. It is also worth applying methods of individualised

learning, allowing students to choose topics for research, and participation in practical sessions, or training. This approach allows students to be motivated to actively participate in the learning process and promotes the development of their creative potential and interest in the profession. For example, project work can be introduced, where students independently explore specific issues of social psychology and then present their results as research papers or practical recommendations for real organisations.

Thus, to improve the training of future psychologists, it is necessary to organise university collaboration with clinics and psychological centres that provide students with the opportunity to gain practical skills. One way to achieve this is to create practical training programmes where students can work with real-world cases. This will allow them to understand how social psychology knowledge is applied in practice. It is also important to implement psychotherapeutic training sessions and integrate project work based in real organisations, where students can work on research related to social problems, mental health, or intercultural communication. In addition, to improve the effectiveness of learning, it is necessary to develop motivational systems, including elements of gamification and individualised learning programmes, which will promote the development of students' creative potential and their active participation in the learning process. By combining theoretical knowledge with practical skills, comprehensive training for future psychologists can be ensured, meeting the demands of the modern job market and societal needs.

Discussion

The teaching of social psychology in the training of psychologists is an important element that provides students with an understanding of social processes and interpersonal relationships, which is necessary for work in any psychological practice. As noted by Y. Liu *et al.* (2024), emotional engagement and psychological capital are important factors for learning and academic

achievement, especially in blended learning environments. These aspects confirm the importance of social psychology as a foundation for developing motivation and self-awareness in students, which are necessary for further professional practice. The study by L. Peretiakko & M. Teslenko (2022) explores the psychological prerequisites for the development of professional self-identity in future psychologists, emphasising the crucial role of their motivational sphere and the identification of effective psychological and pedagogical conditions for its formation. Analysing the research of M. London *et al.* (2023), which emphasised the importance of developing self-awareness and interpersonal skills, it can be noted that social psychology plays an important role in the formation of these qualities in future psychologists. These skills help students to interact effectively with other people in a professional environment, which is an integral part of psychological practice. Furthermore, this was consistent with the findings of J. Garcia & G. Cohen (2013), who analysed how social psychology can improve student-teacher interactions. They note that the application of social psychology principles in the learning process contributes to creating a more favourable educational environment based on trust and mutual understanding. The research also confirmed that the use of interactive teaching methods improves students' communication skills and promotes their more active participation in the learning process.

M. Mampane (2023) in their research emphasised the role of social psychology in the training of teachers and psychologists in South Africa. This approach can be extrapolated to other regions where social psychology contributes to the formation of the necessary professional qualities for working with students, as well as for understanding and resolving social and emotional problems in educational institutions. This correlates with the current study, as the relevance of teaching social psychology in the training of psychologists is a key factor in their professional effectiveness. The importance of social psychology for

understanding human behaviour in groups is also highlighted by S. Plous *et al.* (2020). They noted that studying social psychology allows students to better understand the mechanisms of group behaviour and effectively apply this knowledge in practice. They also emphasised the need to develop empathy and the ability to resolve conflicts, which are key for a psychologist's work in any environment. This confirms the thesis about the importance of socio-psychological training for future specialists, which is also the subject of this research. Since social psychology helps future psychologists better understand social processes related to interpersonal interactions, this is emphasised in the research by A. Mehrad *et al.* (2023). The authors noted that knowledge of social psychology allows for effective interaction with people in various social contexts, which is important for a psychologist's development. Thus, their research, like the current one, confirms the need to integrate sociopsychological disciplines into the curricula for training psychologists.

The research by A. Sullivan *et al.* (2023) emphasised the necessity of social psychology for developing inclusive practices in schools. This is particularly important for the training of psychologists, as social psychology helps to understand how social and cultural factors influence people's behaviour and mental health. Knowledge of social psychology enables future specialists to work effectively with children with special educational needs, contributing to the creation of a favourable learning environment. This aligns with the current study, as the relevance of teaching social psychology in the training of psychologists directly affects their ability to ensure inclusivity and support for various categories of clients. In the article of A. Uskul *et al.* (2024), it is emphasised that social psychology is necessary for understanding intercultural processes. In the context of globalisation and multiculturalism, this knowledge becomes critically important for psychologists who work in multicultural environments and must consider social and cultural factors in their work with clients. This is

particularly relevant for psychologists who are involved in the adaptation of migrants, the resolution of inter-ethnic conflicts, and the development of intercultural communication. This approach is also confirmed by the current study, as social psychology helps to develop the professional skills necessary for effective interaction with representatives of different cultural groups. S. Power *et al.* (2023) emphasised the importance of social psychology for the development of social justice and equality. They stressed that social psychologists play a key role in overcoming discrimination, inequality, and social isolation. This fully corresponds to the current requirements for the training of psychologists, as they must possess knowledge that helps in solving social problems both at the level of individual psychotherapy and in the field of social assistance and community work. This study also confirms the need to integrate social psychology into professional training programmes, as it forms in future psychologists the competencies that promote social equality, mutual understanding, and effective conflict resolution.

The importance of social psychology for mental health in the context of the COVID-19 pandemic was investigated by V. Saladino *et al.* (2020) and T. Liang (2022). They emphasised that social factors, such as isolation and stress, have a significant impact on people's mental health. Knowledge of social psychology allows psychologists to understand these processes and develop support methods for people in crisis situations. The study of W. Mischel (1996) also emphasised the influence of social factors on individual behaviour, which is important for psychologists in various areas of practice. Social psychology helps psychologists to better understand how social contexts shape individual behaviour and, accordingly, to apply this knowledge in the process of counselling and therapy. C. Steinebach (2020) and P. Peterson *et al.* (2022) noted the importance of social psychology for the development of critical thinking and professional skills in psychologists. This helps students not only to acquire theoretical knowledge but also to gain practical skills

necessary for effective work with people in various social contexts, which is important for a psychologist's further career.

Considering the importance of social psychology for supporting people in complex social situations, E. Treichler *et al.* (2020) noted that it is important for the formation of effective training sessions and programmes that promote the development of social skills in psychologists. This makes it possible not only to theoretically but also practically prepare students for work with clients, providing them with the necessary skills of interaction, empathy, and constructive conflict resolution. This approach is extremely important for the training of modern psychologists, as it allows them to work effectively in various social contexts. The research also confirms this, as the relevance of teaching social psychology lies not only in the transmission of knowledge but also in the development of practical competencies for future professional practice. Understanding social processes and effectively solving social problems are an integral part of the training of psychologists, as confirmed by the research of G. Velez & S. Power (2024), J. Jost (2024), and S. Kozimov (2024). They pointed to the need to include social psychology in curricula to develop interpersonal communication skills, which are critical for psychologists working in conditions of social change. Social psychology allows students to better understand group processes, mechanisms of social influence, and the adaptation of the individual to changes in society. This aligns with the current study, as the training of psychologists must take into account modern challenges, including working with clients in situations of social instability, crisis conditions, and cultural transformation.

Conclusions

The study confirmed the importance of studying social psychology, which is one of the most important disciplines for future psychologists, as it helps to better understand social processes, interpersonal interactions, and the influence

of the social environment on human behaviour. Studying the fundamentals of social psychology allowed students to understand the mechanisms of group dynamics, stereotypes, prejudices, and interactions between people in various social contexts. During their practical placements, students interned at three clinics and centres: Mind-Care Clinic, the specialised psychotherapy centre Dobrobut, and the advisory centre Psychology Hub. In each of these institutions, students gained practical skills by working with real patients under the supervision of experienced psychologists and psychotherapists. The practical placements in these institutions allowed students not only to observe the work of specialists but also to participate in conducting psychodiagnostic assessments, consultations, and therapeutic sessions. However, the results of the practical placements showed that most students experienced some difficulties in direct communication with patients due to insufficient experience in real-world settings. Analysing the results obtained, it was found that the main problem is the insufficient number of practical sessions for students in the learning process. Most of them felt some uncertainty in working with real clients, as the lack of practice complicates adaptation to real-world conditions.

The results of the survey of the experimental and traditional groups showed significant differences in learning effectiveness, confirming the importance of practical methods in the training of future psychologists. The experimental group,

which actively used interactive teaching methods such as role-playing, case studies, and discussions, received higher scores for ease of task completion (8 points) and ability to apply knowledge in practice (9 points). This indicates that a practical approach helps students to better understand and apply knowledge in real-world situations. The traditional group, which focused on theoretical lectures and seminars, showed lower results: the score for ease of task completion was 6 points, and the ability to apply knowledge was 6 points, indicating difficulties in the absence of practical experience.

Thus, the results obtained demonstrate that the integration of practical methods into the learning process is necessary for the training of future psychologists. Recommendations for improving the social psychology course programme were developed, taking into account the results of the study. Prospects for further research include studying the impact of social and cultural factors on the perception of psychological teaching methods.

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Conflict of Interest

None.

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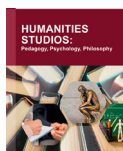
Актуальність викладання соціальної психології у процесі підготовки психологів

Таїса Ямчук

Кандидат психологічних наук, доцент
Мукачівський державний університет
89600, вул. Ужгородська, 26, м. Мукачево, Україна
<https://orcid.org/0000-0003-0392-2249>

Анотація. Метою дослідження було визначити вплив соціальної психології у підготовці майбутніх психологів, враховуючи результати студентів під час проходження практики. Методологія включала аналіз особливостей навчального курсу «Соціальна психологія», порівняння результатів експериментальної та контрольної груп після проходження практики, педагогічний експеримент студентів у клініках «MindCare», «Dobrobut», «Psychology Hub», а також проведення Strengths, Weaknesses, Opportunities, Threats аналізу. У ході дослідження було проаналізовано викладання курсу «Соціальна психологія» в Мукачівському державному університеті та оцінено ефективність інтерактивних методів навчання. Було проведено педагогічний експеримент із двома групами студентів-психологів: контрольна група зосереджувалася на вивченні документів і теоретичних матеріалів, тоді як експериментальна група активно використовувала практичні методи, такі як кейс-стаді, рольові ігри та тренінги. Аналіз отриманих даних засвідчив, що студенти експериментальної групи продемонстрували вищий рівень сформованих професійних компетентностей, кращі комунікативні навички та здатність ефективно працювати у реальних соціально-психологічних ситуаціях. Результати дослідження підтвердили, що застосування інтерактивних методів у викладанні соціальної психології сприяє покращенню засвоєння матеріалу, розвитку практичних навичок та підвищенню професійної готовності студентів. Порівняльний аналіз показав, що студенти експериментальної групи мали вищу успішність у застосуванні теоретичних знань на практиці, зокрема у сфері мотивації персоналу та управління соціальними взаємодіями. Важливу роль у цьому відіграло отримання зворотного зв'язку від керівників клінік та використання сучасних технологій для комунікації між викладачами та студентами. Отримані результати можуть бути використані для розробки нових підходів до викладання соціальної психології, зокрема, інтеграції мотиваційних систем у навчальний процес

Ключові слова: підготовка фахівців; критичне мислення; новітні технології; практичні завдання; покращення навичок



Age-related changes in the development of communicative competence in adults

Olha Shapran*

Doctor of Pedagogical Sciences, Professor
Hryhorii Skovoroda University in Pereiaslav
08401, 30 Sukhomlynskoh Str., Pereiaslav, Ukraine
<https://orcid.org/0000-0002-7514-6632>

Yurii Shapran

Doctor of Pedagogical Sciences, Professor
Hryhorii Skovoroda University in Pereiaslav
08401, 30 Sukhomlynskoh Str., Pereiaslav, Ukraine
<https://orcid.org/0000-0002-4176-7502>

Vira Pomyliuko

Doctor of Psychological Sciences, Associate Professor
ADRA Polska
40-093, ½ Chopin Str., Katowice, Poland
<https://orcid.org/0000-0002-1547-5071>

Liudmyla Gusak

Doctor of Pedagogical Sciences, Professor
Lesya Ukrainka Volyn National University
43025, 13 Voli Avenue, Lutsk, Ukraine
<https://orcid.org/0000-0001-7570-2574>

Oleksii Shapran

Postgraduate Student
Hryhorii Skovoroda University of Pereiaslav
08401, 30 Sukhomlynskoh Str., Pereiaslav, Ukraine
<https://orcid.org/0000-0003-1329-4047>

Abstract. The longest age stage in human development is adulthood, which is characterised by the accumulation of communicative experience and numerous opportunities for effective interaction with others. This article examined the psychophysiological features of communicative competence development in adulthood and identified guidelines for promoting long-term communicative functionality in adults, considering their psycholinguistic features. Among the methods used in the study,

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*Corresponding author



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key approaches include theoretical, empirical, and statistical analysis. The study explored the essential characteristics and age-related features of communicative competence development in adults, as well as anatomical and functional changes in adulthood. It was demonstrated that older people do not lack communicative knowledge or skills, compared with younger individuals. Furthermore, heterochrony and uneven ageing among individuals and groups were also confirmed. Experimental findings indicated that most middle-aged individuals exhibit a high level of communicative competence, which can be attributed to their accumulated experience in communication. This is further supported by competence, knowledge and skills, as well as their willingness to share information with others. A comparative analysis of early and middle adulthood groups revealed that communicative competence indicators are slightly higher in early adulthood than in middle adulthood. Taking into account the findings on communicative competence development in adulthood, methodological recommendations have been developed for individuals at different stages of this life period

Keywords: age-related changes; communication; interpersonal interaction; early, middle, and late adulthood; psychophysiological features; guidelines

Introduction

Communication in modern society is a crucial means of transferring knowledge and information. It is an integral part of human activity throughout life. Communication skills are accumulated by a healthy individual in various socio-cultural, political, and economic contexts and contribute to the development of their communicative competence. The longest age stage in an individual's development is adulthood, which typically spans two-thirds of a person's life. This period of human ontogeny is characterised by the accumulation of communicative experience, which opens up new opportunities for effective interaction with others and facilitates the realisation of one's talents and abilities. During adulthood, communication enables individuals to deepen and broaden their communicative range, thereby enhancing both self-perception and comprehension of the broader modern world. This issue arises from the necessity not only to cultivate a communicatively competent and competitive individual capable of addressing diverse challenges throughout life but also to refine and adapt already established competencies.

The authors conceptualised this special issue as a means of highlighting recent research on how language varies with age and how ageing

may be influenced by language. Over the past 40 years, research has documented complex interactions between language processing and ageing (Abrams & Stine-Morrow, 2024). The study by N. Pereira *et al.* (2019) investigated differences in communication challenges between younger and older adults during a communicative discourse (CD) task. Their findings revealed that younger adults exhibited fewer difficulties in areas such as expressive language, pragmatic understanding, discourse cohesion and coherence, comprehension, and interpreting emotional tone. Conversely, older adults demonstrated greater verbal proactivity and experienced fewer instances of word retrieval problems.

M. Shafto *et al.* (2024) examined age differences in reactivity to emotionally evocative words that varied in valence (pleasantness) and arousal (intensity) to explore whether young, middle-aged, and older adults differentially experience humour and taboo in language. When rating a long list of words for taboo, humour, and arousal, older and middle-aged adults provided lower overall arousal ratings than young adults. Furthermore, while arousal ratings were predictive of both taboo and humour ratings, these relationships weakened with age. The relationship

between taboo and humour was also weaker in older adults compared with younger adults. The findings suggest that even at the word level, emotionally evocative language may be experienced differently throughout adulthood and ageing (Kolly-Shamne, 2024).

H. Baek *et al.* (2024) also demonstrated age-related consistency in visual word recognition, as measured by word frequency effects in Korean speakers. Using a lexical decision task with almost 500 adults aged between their 20s and 60s, they showed that higher-frequency Korean words were recognised more quickly than lower-frequency words, similar to the well-established observed with English words. In their study, J. Schepens *et al.* (2022) explored how age affects adults learning Dutch as a second language, examining speaking, writing, listening, and reading abilities. Their research indicated that individuals who began learning Dutch after the age of 25 showed age-related declines in both language learning and cognitive functions. Specifically, they observed a gradual decrease in performance across all four language skills, with speaking being particularly affected. Furthermore, they found that the degree of difference between an individual's native language and Dutch, in terms of morphology, vocabulary, and phonology, amplified this age-related decline, especially in spoken language. The authors concluded that a person's native language background influences how age impacts language learning, suggesting that both inherent language learning capabilities and accumulated native language proficiency affect this process.

This article aimed to identify the specific developmental patterns of communicative competence in adults and to enhance sustained and effective communication by considering individual linguistic profiles.

Materials and Methods

The study was conducted in three stages: theoretical, empirical, and methodological. The theoretical stage involved the collection and thorough analysis, generalisation, and systematisation of

psychological and pedagogical literature on the research problem. The empirical stage was carried out by one of the authors of this article, V. Pomiluyko, using diagnostic methods ("Diagnostics of the General Level of Communication" by V. Ryakhovsky, n.d.; "Determination of Interpersonal Interaction Styles" by S. Maksymova & Y. Lobeiko, n.d.) and statistical methods (for the quantitative and qualitative processing of the study's empirical results) in 2020 on a sample of 354 people (210 in early adulthood, 144 in middle adulthood). The experiment involved adult employees of Business Constructor (Kyiv); "Ukrغاز" Group of Companies (Kyiv, Zaporizhzhia, Mykolaiv, Khmelnytskyi); KSU (Kyiv, Smila, Shepetivka); journal editorial office ZhKh (Kyiv); the Institute of Energy Audit and Energy Metering (Lviv); and Stanislavska Heat and Power Company (Ivano-Frankivsk). The methodological stage involved summarising the data obtained and providing practical recommendations for the development of the phenomenon under study (2021-2024). This provided a sufficient scientific basis for: a) establishing the psychophysiological characteristics of the development of communicative competence at different stages of adulthood (early, middle, and late); b) conducting experimental studies to pinpoint distinct variations in communicative competence development between early and middle adulthood; c) formulating methodological recommendations for improving the communicative competence of adults. All procedures were conducted following the American Sociological Association's Code of Ethics (1997).

In the course of the study, scientific articles covering the following aspects of the problem were analysed: essential features and components of adult communicative competence (Light, 1989; Light & McNaughton, 2014); the characteristics of adults' communicative abilities throughout their professional careers (including the period of professional adaptation 18-25 years), primary professionalisation (23-30 years), secondary professionalisation (28-40 years), and professional skill development (from 35 years onwards) (Korniaka, 2011); age differences of different

groups among adults and factors influencing communicative competence and communicative behaviour (Gordon *et al.*, 2019; Pereira *et al.*, 2019); the impact of age on an individual's awareness of their own communication skills in various language activities, including speaking, comprehension, reading, and writing; age-related effects on the selection of language used for expressing emotions in diverse contexts, as well as language preferences during mental calculations and inner monologues in adults aged 18 and above (Dewaele, 2009); a comparative analysis of changes in adult sign language communication (Schubotz *et al.*, 2019; Arslan & Göksun, 2020); interpersonal communication among the elderly (Kovalenko, 2015); the development of intercultural communicative competence among highly skilled refugees and how it can enhance their intercultural communication abilities through the use of accessible, open-source educational resources (Schneider *et al.*, 2024).

Among studies of age-related changes in the development of adult communicative competence, the proposed study focuses on research related to changes in thinking and physiological states that affect communication, namely: the re-organisation of brain activation patterns with age (Cabeza *et al.*, 2002); changes in linguistic skills based on age-related neuroimaging results (Rosselli *et al.*, 2014); language and communication disorders associated with the physiological processes of human ageing (Chrut *et al.*, 2018); the effect of language competence on memory at different stages of adulthood (Schneider *et al.*, 2016). Thus, the research employed a comprehensive, multi-stage approach, integrating theoretical analysis, empirical data collection, and methodological synthesis to explore the development of communicative competence across adulthood.

Results and Discussion

Study of the main features and components of communicative competence in adults

O. Korniiaka (2011) defines communicative competence as a multifaceted and potentially

conflicting integration of communicative understanding and abilities. This definition, derived from a synthesis of existing literature and her own empirical and theoretical research, emphasises the alignment of these elements with the aims and outcomes of an individual's communicative actions. J. Light (1989), a long-time researcher in communicative competence, views it as the capacity to communicate effectively in everyday settings and to meet routine communication requirements. The researcher posits that communicative competence is a fluid and context-dependent interpersonal concept. This concept is based on the effectiveness and appropriateness of communication, as well as proficiency in knowledge, sound judgment, and practical skills. It encompasses linguistic, operational, social, and strategic competencies. Linguistic and operational competencies involve the use of communication tools whereas social and strategic competencies reflect the functionality of knowledge and judgment in communicative interaction. These four fundamental components of communicative competence have remained central in subsequent research by this scholar. In J. Light's interpretation of communicative competence, the breadth of linguistic, operational, social, and strategic skills required to achieve it has changed. Thus, J. Light & D. McNaughton (2014) argue that the scope of communication needs in contemporary society has expanded dramatically, now encompassing not only personal communication but also written communication, Internet access, and social networking. Modern media, mobile phones, text messaging, blogging, and e-commerce influence the development of adults' communicative competence. It is worth noting that J. Light & D. McNaughton's (2014) definition primarily concerns individuals requiring additional and alternative communication methods; however, its core principles also apply to the general population.

Contemporary definitions of communicative competence highlight the necessary communicative knowledge and skills for effective communication across diverse contexts. In a report by

ETS Research by T. Laughlin *et al.* (2015), communicative competence within the context of a culturally diverse, information-driven society. It is described as a capacity encompassing knowledge, skills, abilities, adherence to rules, personal attributes, and values. This capacity enables individuals to successfully generate, convey, receive, and interpret communication in various cultural interaction scenarios. According to one model, communicative competence comprises seven interconnected elements: linguistic, sociolinguistic, discourse, strategic, sociocultural, social, and information and communication technology (ICT) competencies (Wright *et al.*, 2014). Therefore, adult communicative competence can be understood as a multifaceted, integrated interpersonal trait. It relies on a complex system of interaction strategies and interpersonal connections, built upon a foundation of knowledge, skills, and abilities that facilitate successful communication. At its core, communicative competence encompasses linguistic (including analytical skills, vocabulary, linguistic and stylistic accuracy, and verbal expression), social (such as social adaptability, situational awareness in communication, and social engagement), and psychological (including motivation for personal development and communication, a drive for self-fulfilment, and reflective capacity) attributes.

Development of communicative competence at different stages of adulthood

Given the variety of age-based frameworks for adulthood, each with its own conceptual foundation, this research adopted the established model developed by American psychologists G. Craig & D. Baucum (1999), which is widely recognised within academic communities. They noted that the early period of adulthood lasts from 20 to 40 years, the middle period from 40 to 60 years, and the late period from 60 years onwards. It is widely acknowledged that the left hemisphere of the brain plays a crucial role in shaping an individual's speech capabilities during early adulthood. Building on prior research, it is reasonable

to suggest that human communication relies on two distinct "language systems": one governing lexical-semantic processing (associated with Wernicke's area) and the other managing morpho-syntactic functions (tied to Broca's area, located in the left posterior frontal lobe). Additionally, the automaticity of speech develops through consistent practice (Ardila, 2011).

The analysis of neuroimaging study results demonstrates that at an early age, speech is mainly governed by the functioning of the left hemisphere of the cerebral cortex (Dehaene-Lambertz *et al.*, 2002; Cabeza & Dennis, 2012). This organisation of communicative capabilities has distinct characteristics in adults, which are linked to age-related anatomical and physiological changes. These changes are associated with the predominance of the right hemisphere of the brain over the left, and therefore cognitive processes become somewhat more symmetrical (Wingfield & Grossman, 2006). The observation that brain activity patterns shift during cognitive tasks aligns with findings from R. Cabeza *et al.* (2002), who studied age-related changes in cognitive processing. M. Rosselli *et al.* (2014) further examined age-related shifts in language skills using neuroimaging, highlighting the interconnectedness of speech and thought. They noted that while most adults exhibit left-hemisphere dominance for language, ageing brings about brain changes, including increased right-hemisphere activity during language tasks. This suggests a gradual decrease in language lateralisation with age, accompanied by a more symmetrical distribution of cognitive functions. M. Rosselli *et al.* (2014) also emphasise the dynamic nature of language lateralisation, which begins as bilateral in early life, becomes unilateral in early adulthood, and gradually returns to a more bilateral pattern in middle and late adulthood, reflecting the influence of experience and maturation.

Now attention turns to the language characteristics of adulthood. J. Gordon *et al.* (2019) identify spoken language as the primary means of social interaction, in which communication

and communication skills change with age and are a potential source of reinforcing stereotypes. Their study analysed the stories of 84 speakers aged 30-89 to identify age differences and compare them with factors that influence perceptions of age and communication competence. Three groups of experts evaluated the quality of communication and the age of adults: 44 individuals listened to audio recordings of stories, 51 individuals read their transcripts, and 24 experts assessed 10-second speech samples extracted from the stories. Based on the data obtained, the researchers found that older speakers (middle and late adulthood) communicated more slowly, but they showed minimal language differences compared with early adulthood speakers. The participants' age was objectively assessed based on acoustic signal patterns (speech rate and vocal characteristics). Ratings of adult speech were not strongly related to perceived age but were influenced by various aspects of language and speech. In particular, speakers whose stories were longer and delivered at a faster pace were identified as the best communicators. An individual's age can be estimated with considerable accuracy by analysing vocal attributes such as timbre, pitch, speech tempo, and volume. While certain linguistic abilities, including vocabulary, grammatical assessment, and repetition, tend to remain stable, others, such as comprehension of complex sentences and word retrieval, may decline over time.

A comparative study of age differences in spoken language ability was also conducted by researchers such as N. Pereira *et al.* (2019) between 2015 and 2017 as part of two large projects approved by the Research Ethics Committee of the Pontifical Catholic University of Rio Grande do Sul (PUCRS). The study involved 95 participants aged 18 to 55 years (54 early adulthood participants and 41 middle-aged participants). The frequency of communication behaviours was compared between groups using MANCOVA tests at a significance level of $p \leq 0.05$. The experimental data were collected and analysed using SPSS Statistics version 20. The results obtained

indicated that participants in early and middle adulthood demonstrated significant differences in 19 aspects of spoken discourse including pragmatics, expression, cohesion, coherence, comprehension, emotionality, and prosody. In most cases, the first topic was "family", which was discussed by both older participants (97.6%; $n = 40$) and younger participants (96.3%; $n = 52$). The second most frequently discussed topic was "work", which was mentioned by 80.5% ($n = 33$) of older participants and 79.6% ($n = 43$) of younger participants, followed by "leisure" (older participants: 17.1%; $n = 7$; younger participants: 16.7%; $n = 9$). Emotional behaviours such as crying or irritability were observed in 9.8% ($n = 4$) of older participants, whereas none of the younger participants exhibited these behaviours. The examiner took an active part in the conversation with 87.8% ($n = 36$) of older participants and 96.3% ($n = 52$) of younger participants. Middle-aged participants were more talkative than early adulthood participants. However, they provided less accurate information on the topics discussed. Early adulthood participants were more consistent in their storytelling, outperforming middle-aged participants in terms of coherence. The data obtained did not confirm the hypothesis of group differences in communicative behaviour related to speech planning and self-control (including repetition of words (RW), repetition of information (RI), syllabic false starts (FS), sudden interruptions (AI), and repetition of the examiner's last words (RSE)). The results of the experiment demonstrated that both groups received the same scores on this variable. Thus, these aspects of communicative behaviour are a normal part of the speech of healthy individuals across all age groups.

Several scholars, such as L. Schubotz *et al.* (2019) and B. Arslan & T. Göksun (2020), have examined how sign language usage varies across adulthood, finding that while fundamental signing abilities remain largely consistent, certain age-related differences emerge. For instance, there is a documented decline in the use of iconic gestures, such as tracing a road in the air, among

older adults compared to younger ones (Arslan & Göksun, 2020). However, the number of words and narrative elements, as well as the speed of iconic gestures and the overall frequency of multimodal expressions, do not show significant variation between early and late adulthood. Notably, individuals in early adulthood demonstrate greater adaptability in their speech and gestures to accommodate the specific demands of a communicative situation, whereas those in late adulthood exhibit less flexibility in their communicative style (Schubotz *et al.*, 2019). The observed reduction in gesture usage among older adults in situations lacking shared knowledge may be attributed to a strategy of reducing gestures to manage increased cognitive demands.

At the same time, psycholinguists demonstrate that adult participants are able to go beyond negative stereotypes: their speech provides evidence of the positive influence of old age on communicative competence and directly contrasts with studies demonstrating a link between age-related processing limitations and deficits in the communicative abilities of older adults compared to younger ones (Burke *et al.*, 1991; Gold & Arbuckle, 1995; Hummert *et al.*, 1998). A similar conclusion has been drawn by several other scholars. Thus, M. Long *et al.* (2020), based on the results of a study with a representative sample of 200 native English speakers aged 19 to 82 with normal colour vision and hearing, challenge the conclusion that older adults are usually less effective than younger ones due to a decline in age-related cognitive abilities. These researchers argue that the preservation of pragmatic skills in later life is an adaptive phenomenon, as successful communication depends on the effective coordination of communicators' efforts.

Claims regarding age-related shifts in adult communication skills, alongside observations that older individuals maintain a strong repertoire of communicative knowledge and abilities, are not mutually exclusive. Rather, the communication skills honed over a lifetime persist, enabling individuals to articulate their thoughts with

precision, establish rapport, and engage in successful negotiations. Furthermore, the concept of effective collaboration between communicators is valid, as the success of any two-way exchange relies on mutual tolerance and adaptability. This is evidenced by the emotional satisfaction derived from interaction, shared understanding, and the practical value of the information exchanged. In addition, each person has an individual development trajectory, which is determined by personal activity. Although interconnected, different types of ageing (biological, physical, psychological, social, and economic) have different time frames. Consequently, there is heterochronicity and unevenness in the ageing of individuals and population groups.

The greatest age differences between different stages of adulthood (early, middle, late) are observed after the age of 60 when most people around the world retire. During late adulthood, the effects of the ageing process are most frequently observed, including in the sphere of communication. The scientific research of A. Chrut *et al.* (2018) on speech and communication disorders associated with physiological ageing have been particularly significant. These changes are especially evident in late adulthood and affect the central nervous system, muscles, respiration, and phonation. Anatomical and functional changes primarily affect speech production. Approximately 50% of older adults (over 80 years of age) are diagnosed with varicose veins in the lower part of the tongue and its hyoid region, decreased saliva production and flaccidity, loss of muscle fibres during mastication, dental problems, and other related issues. In language production, age-related changes are observed at all levels (phonological, syntactic, and semantic). Studies indicate that individuals over 70 may experience a decline in word-finding abilities. Furthermore, their speech may exhibit reduced coherence, along with less frequent and accurate use of anaphora and conjunctions. They might also simplify their language, favouring basic sentence structures, and display excessive verbosity. Cognitive processing

generally slows, leading to an increase in talkativeness and a tendency to share personal anecdotes.

Age-related verbosity, observed in later life, can be attributed, in part, to a reduced capacity to filter out extraneous information (Gold & Arbuckle, 1995). Furthermore, as individuals age, they may experience a general decline in cognitive abilities, which can result in less coherent discourse. This is because they may struggle to prioritise and select the most pertinent semantic information for their speech (Hoffman *et al.*, 2018). Consequently, this can lead to a reduced ability to tailor communication to the listener's needs. Communication plays a particularly vital role in the later stages of life, significantly impacting an individual's sense of self. When an older adult's need for social interaction remains unfulfilled, they may exhibit behaviours that strain relationships, such as becoming overly persistent or experiencing distress when others avoid them (Kovalenko, 2015). Consequently, the erosion of strong social connections, the absence of adequate communication, and diminished self-regulation can contribute to heightened self-focus, a desire for recognition, and feelings of bitterness in older adults. To mitigate these tendencies, it has been suggested that older adults participate in initiatives such as information literacy programmes, informal education, and the expansion of their social networks online.

The later years of life often present communication challenges due to the onset of conditions such as hearing impairment, diminished eyesight, altered articulation, and cognitive decline associated with conditions like dementia. Furthermore, older adults typically find it more difficult to process rapid or highly condensed speech compared to younger individuals. Research by J. Lee (2015) demonstrates that word recognition in older adults decreases as speech speed increases, whereas younger adults' recognition remains relatively stable, indicating a slower perceptual processing rate with age. M. Hummert *et al.* (1998) emphasise the importance of adjusting speech patterns when communicating with individuals

experiencing age-related or illness-induced cognitive slowing. To ensure comprehension, communicators may need to slow their speech below what is generally considered optimal.

Generally, older adults maintain comprehension in calm settings and with familiar voices. However, they are notably susceptible to background noise, which can significantly hinder their ability to understand spoken language. Compared to younger individuals, older adults experience greater difficulty processing speech in noisy environments due to decreased hearing sensitivity and challenges with focused attention (Ben-David *et al.*, 2012). Consequently, selecting quiet locations for conversations is a key recommendation for effective communication with older adults. These and other tailored strategies, informed by the unique communication patterns of this age group, aim to minimise discomfort during interactions.

The evolution of communication skills exhibits fewer variations between early and middle adulthood. Individuals in these age groups usually work actively and communicate with colleagues, family, friends, and children. Differences in communicative competence between these groups became a focal point in the experimental research. J. Harwood & H. Giles (1993), in their research on language and communication across early and middle adulthood, identified middle age as a period marked by significant challenges in intergenerational communication. Individuals in this stage often engage in interactions with both significantly older individuals, such as ageing parents or workplace superiors, and much younger individuals, like their own children. This diverse range of communication partners, they argue, necessitates a more extensive set of communication skills compared to other life stages. Notably, they highlighted variations in conversational topics across different adult age groups. Early adulthood conversations tend to focus on future aspirations, whereas middle and late adulthood discussions often reflect on past experiences. In interactions with younger adults, older individuals frequently assume a mentorship role, guiding future

planning. Consequently, to enhance communicative competence in middle and late adulthood, engagement in mentorship, tutoring, and guidance programmes for younger professionals – both within their current and former workplaces – is recommended.

Results of the conducted empirical research

Two diagnostic methods were used in the empirical study. The first method, “Diagnostics of

the General Level of Communication” by V. Ryakhovsky, n.d.), was chosen to assess the communicative competence of adults as its main indicators – flexibility, emotional stability and endurance in conflict resolution, tolerance, and proficiency in oral and written communication – align with the manifestations of communicative competence (Filonenko, 2008). According to this methodology, the following results were obtained and are shown in Figure 1:

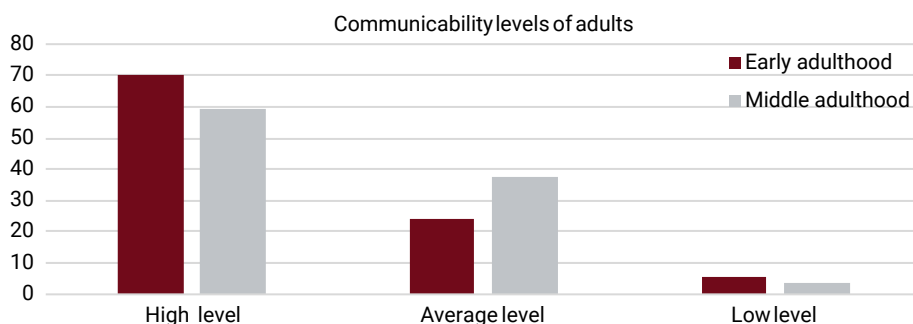


Figure 1. Communicability levels of adults

Source: developed by the authors

The strong performance observed in this study, using the chosen assessment method, can likely be attributed to the demographic composition of the participants. The majority of respondents were company managers and highly educated professionals – individuals who frequently engage in interpersonal communication and have developed proficiency in both verbal and non-verbal communication techniques, such as gestures and facial expressions.

The second method was used to assess activity-passivity in interpersonal interactions. Regarding the high activity-passivity index in interpersonal interactions, the following trends were identified using the methodology “Determination of Interpersonal Interaction Styles” (Maksymova & Lobeiko, n.d.): a decline in its manifestation among middle-aged participants compared to those in early adulthood, from 59.02% to 57.43%, respectively. No statistically significant differences were observed in the lower levels of

interpersonal interaction between the comparison groups: a slight increase in the percentage of middle-aged participants (+0.23%) from early adulthood (0.95%) was recorded. These respondents were mostly focused on an individual style of cooperation and displayed limited interest in collaborating with others. For the average level of interpersonal interaction, minor variations were recorded: early adulthood – 39.98%, middle adulthood – 41.32% (+1.34).

Based on the study's findings on the development of communicative competence in adulthood, methodological recommendations have been formulated for individuals at different stages of this life period, namely:

- for early adulthood: development of communicative confidence for more effective acquisition of communicative skills; paying attention to feedback in communication to enhance its effectiveness; fostering an interest in engaging with new people;

➤ for middle adulthood: development of emotional and communicative flexibility through a combination of individual behavioural patterns and varied forms of communicative role interaction; emphasis on empathic listening and the ability to interpret the emotional state of others through verbal and non-verbal cues; overcoming inertia in communication, providing constructive feedback, and integrating past experiences with future professional goals;

➤ for late adulthood: acquisition or refinement of information literacy skills through non-formal education: broadening social circles, including engagement in online social networks; active involvement in mentoring, tutoring, and knowledge-sharing with younger generations; choosing an appropriate environment for communication to ensure comfort, among other strategies.

Conclusions

It has been established that in adulthood, particular importance is placed on the development of an individual's communicative competence, which facilitates the assimilation and transmission of information, the accumulation of communicative experience, and effective interpersonal interaction with others.

The theoretical analysis revealed that the functional organisation of the cerebral cortex in adulthood undergoes age-related changes, shifting from unilateral processing in early adulthood to bilateral processing in late adulthood. With age, individuals experience changes in various speech characteristics, such as voice timbre, pitch, speech speed, and volume. Some communication skills remain unchanged, including vocabulary, grammatical judgment, repetition ability, and the use of gestures. However, ageing also brings about changes, such as a decline in comprehension and the ability to construct complex statements, difficulties with word retrieval, reduced cohesion in speech, increased use of simple sentences, excessive talkativeness, and a tendency towards personal narration. These changes become

particularly pronounced in late adulthood and are associated with the functioning of the central nervous system, muscles, hearing, speech, and respiration. Anatomical and functional changes primarily affect executive speech processes. Despite these age-related changes in communicative competence, there is no significant deficit in communicative knowledge and skills among older adults compared to younger individuals. Instead, heterochrony and uneven patterns of ageing are observed among individuals and groups.

The experimental study revealed that most individuals in early and middle adulthood demonstrate a high level of communicative competence, which can be attributed to their accumulated communication experience. This is reflected in their proficiency in interpersonal interaction, their willingness to exchange information, and their ability to apply their communicative knowledge and skills effectively.

The test results identified notable differences in the development of communicative competence across adulthood. Specifically, the proportion of respondents with a high level of communicative competence is greater in early adulthood than in middle adulthood (by 10.98%); however, the proportion of respondents with a low level of communicative competence is also higher in this age group (by 2.24%). In contrast, a greater number of individuals aged 40-60 exhibit an average level of sociability compared to those aged 20-40. The activity-passivity index in interpersonal interactions among middle-aged individuals shows a slight decline compared to early adulthood (-1.59%), whereas the average level of interaction has slightly increased (+1.34).

These findings results can be explained by the greater communicative engagement observed in early adulthood, particularly in the context of professional development and career aspirations. In early adulthood, individuals typically pursue higher education, engage in frequent communication, and adapt to professional environments. They tend to be open in their interactions, favour group activities and are more inclined to

collaborate and exchange information both within teams and with a broader social network.

In middle adulthood, most individuals hold permanent employment, engage less frequently in formal education or self-directed learning, and have an established social circle. Respondents in this age group have largely achieved their professional goals, hold specific positions, and are less inclined to exchange information as extensively as before, often feeling fatigued by communication. Middle-aged individuals also tend to be more reserved and independent, in part due to workplace competition, making them less flexible in their interactions and more inclined towards individual tasks.

Thus, the comparative analysis of early and middle adulthood indicates that communicative competence tends to be higher in early adulthood than in middle adulthood. Future research should focus on examining the communicative competence of individuals in late adulthood.

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Conflict of Interest

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Вікові зміни у розвитку комунікативної компетентності дорослих

Ольга Шапран

Доктор педагогічних наук, професор
Університет Григорія Сковороди в Переяславі
08401, вул. Сухомлинського, 30, м. Переяслав, Україна
<https://orcid.org/0000-0002-7514-6632>

Юрій Шапран

Доктор педагогічних наук, професор
Університет Григорія Сковороди в Переяславі,
08401, вул. Сухомлинського, 30, м. Переяслав, Україна
<https://orcid.org/0000-0002-4176-7502>

Віра Помилуйко

Доктор психологічних наук, доцент
АДРА Польща
40-093, ½ вул. Шопена, м. Катовіце, Польща
<https://orcid.org/0000-0002-1547-5071>

Людмила Гусак

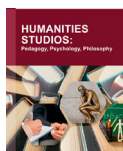
Доктор педагогічних наук, професор
Волинський національний університет імені Лесі Українки
43025, просп. Волі, 13, м. Луцьк, Україна
<https://orcid.org/0000-0001-7570-2574>

Олексій Шапран

Аспірант
Університет Григорія Сковороди в Переяславі
08401, вул. Сухомлинського, 30, м. Переяслав, Україна
<https://orcid.org/0000-0003-1329-4047>

Анотація. Найбільш довготривалим віковим етапом у розвитку особистості є період дорослості, який характеризується накопиченням комунікативного досвіду та великими можливостями для ефективної взаємодії з іншими людьми. У статті встановлено психофізіологічні особливості розвитку комунікативної компетентності в дорослому віці, визначено методичні рекомендації щодо сприяння довготривалій функціональності дорослих у спілкуванні з урахуванням їхніх психолінгвістичних особливостей. Серед методів, що застосовані в дослідженні, потрібно виокремити: теоретичні, емпіричні, статистичні. Авторами розглянуті сутнісні ознаки й вікові особливості розвитку комунікативної компетентності дорослих; з'ясовано анатомічні та функціональні зміни в дорослому віці. Доведено, що спостерігається відсутність дефіциту комунікативних знань й умінь у більш літніх людей у порівнянні з молоддю, гетерохронність і нерівномірність у старінні окремих осіб і груп населення. У процесі експериментальної роботи з'ясовано, що для більшості людей ранньої і середньої дорослості притаманний високий рівень комунікативної компетентності, що можна обґрунтувати накопиченим досвідом спілкування. Це супроводжується наявністю використання у взаємодії компетентнісних знань і вмінь дорослих, їхньою готовністю обмінюватися інформацією між собою й іншими людьми. Порівняльний аналіз досліджуваних груп ранньої та середньої дорослості засвідчив, що показники комунікативної компетентності дещо вищі у ранньому дорослому віці в порівнянні із середнім дорослим віком. З урахуванням результатів дослідження розвитку комунікативної компетентності в дорослому віці розроблено методичні рекомендації, які можна запропонувати людям на різних етапах цього вікового періоду.

Ключові слова: вікові зміни; комунікація; міжособистісна взаємодія; рання, середня і пізня дорослість; психофізіологічні особливості; методичні рекомендації



Minimal effort: The key to effective learning and goal attainment

Iryna Vakulyk*

PhD in Philology, Associate Professor

National University of Life and Environmental Sciences of Ukraine

03041, 15 Heroiv Oborony Str., Kyiv, Ukraine

<https://orcid.org/0000-0002-4812-7719>

Abstract. The study focused on the interaction between the learning environment and activity as a system, exploring questions such as: why learning is necessary, how scientific knowledge should be approached, what outcomes may arise from either the pursuit or avoidance of education, and how to achieve the desired result so that discipline, as thoroughness, transforms into self-discipline. The author conducted an in-depth analysis at the intersection of philosophy, psycholinguistics, and pedagogy. This approach enabled the identification of two key functions: the explication of a scientific worldview and the revelation of the concepts underlying organised consciousness, embedded in the ARC triangle, which differentiates between the notions of “affinity”, “reality”, and “communication”. This study aimed to demonstrate how various types of human activity shape personality through communication and learning – a process that enhances not only communicative abilities but also cognitive capacity and personal development. The research employed several methods, including distributive analysis (used to determine the compatibility of ARC triangle components within different contexts), and modelling – not as a mathematical computation of systems, but as an artificially constructed, abstract, and idealised representation used to simplify and replicate an object in varied learning scenarios and the understanding of actions and their consequences. The model was also interpreted as a sign (a geometric representation of the conceptual triangle). The article examined the activity-based attitude of the information consumer (pupil/student/applicant) towards the tools of mixed communication, which extends beyond social or ethnic identity and operates through vocal, visual, and tactile channels. The empirical findings demonstrated that individual consciousness, modes of thinking, and the principles of communication are enduring truths that must be observed in the process of acquiring new experiences. A comprehensive perspective on learning and personal development was proposed, integrating various elements such as the competency-based approach, the concept of affinity, motivation, and more. The analysis explored how to foster personal qualities, build social connections, and achieve success by engaging the psychological mechanisms that underpin contemporary human behaviour

Keywords: affinity; communication; frame; ARC triangle; competency-based approach; learning

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*Corresponding author



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Introduction

When referring to the mental lexicon, what is meant is a kind of internal dictionary or database within the human brain that contains all the lexical information required for communication. This mental dictionary has two main components: the operational and the semantic. The operational component is responsible for the rapid processing of language information. It allows for the immediate recognition of word and phrase meanings, the construction of sentences, and the conduct of dialogues. It functions much like an automatic mechanism that enables effortless communication. The semantic component, on the other hand, is responsible for the deeper understanding of language. It is based on general knowledge about the world, experience, and associations. Thanks to this component, one can understand not only individual words but also their contextual meanings, as well as engage in complex reasoning and information analysis.

The mental lexicon is a complex and multifaceted mechanism that underpins language comprehension. It serves as the foundation for effective communication. It is important to consider how this mechanism functions within the framework of the competency-based approach to learning. When analysing the competency-based approach as a modern educational concept, the focus is on pupils'/students'/applicants' acquisition of knowledge and the development of practical skills necessary for a successful life in society. Within this concept, "learning" encompasses the formation of a broad set of personal qualities that enable students – and later, future professionals – to address various tasks and challenges effectively, make informed decisions, collaborate with colleagues, reflect on their performance, identify errors, and seek ways to correct them.

As demonstrated by studies conducted by P. Madzik *et al.* (2025), H. He *et al.* (2025), and C. Nguyen *et al.* (2025), there exist comprehensive models – effectively functioning, for instance, in management education, the development of educational standards, or academic training – that

highlight the importance of integrating various motivational factors into a unified system. According to K. Palshkov *et al.* (2024), in the context of modern business, success often hinges on an organisation's ability to effectively motivate its employees and create conditions conducive to their professional development. When appropriate conditions are established – conditions in which individuals feel valued – they are more likely to realise their potential and act with social responsibility. In today's world, where efficiency and productivity are defining factors of success, the issues of motivation and management play an increasingly crucial role. This underscores the relevance of the competency-based approach in education, which goes beyond the acquisition of knowledge to include the development of practical skills necessary for thriving in society (Basiuk & Dobroskok, 2023). Such an approach enables pupils, students, and applicants to better prepare for the demands of the modern world, where the ability to apply theoretical knowledge in real-life contexts is highly valued (Bahno & Serhiichuk, 2023). As a result, all stakeholders benefit – educators, graduates, and future employers alike.

The study aimed to explore how contemporary approaches to education – particularly the competency-based approach and the concept of affinity – contribute to personal development and preparation for the challenges of the modern world. It also sought to examine the importance of motivation and incentives in the learning process. The objectives of the research were as follows: 1) to characterise the competency-based approach to education and to highlight its significance for personal development through generalised interpretations of the concept of the mental lexicon; 2) to examine the concept of affinity in a historical context and to demonstrate its transformation over time, exploring the evolution of the term and its connection with philosophical ideas; 3) to illustrate the interrelationship between learning, desire, behaviour, motivation, and incentives, recognising that learning is a process

influenced by multiple factors; 4) to investigate how the goal of effective learning can be achieved while minimising personal effort.

Literature Review

Initially, the concept of affinity was understood as a philosophical reflection on the nature of knowledge and language (Heidinger & Onea, 2021; Onea, 2024). Over time, it underwent transformations and came to be considered a sense of closeness, attachment, or identification between people, groups, or an individual and an idea (Marcelo-Martínez & Marcelo, 2022; MacArthur *et al.*, 2022; Brevik & Holm, 2023). Gradually, this concept evolved into a space of affinity – affinity in communication, affinity in social networks, technological (virtual and physical) affinity, affinity of time travellers, micro-space coding, and other heterotropic spaces (Gee, 2004; Trinder, 2017). However, its roots can still be traced back to ancient Greek philosophy. In a sense, it can be seen as a reflection of the Greek concepts of “grasping” and “the grasped”, introduced by Plato and Aristotle. The former term implied the process of knowing and understanding, while the latter was the result of this process, namely knowledge (when learning something new, one attempts to “grasp” the object of study from all sides). Also, in the context of interpreting “affinity”, one can recall the Stoics’ “nominal things”, which were grounded in *sapientia*, *fortitudo*, *iustitia*, and *temperantia* – implying that in acquiring knowledge, one must be aware of its purpose, assess personal capabilities, possess inner strength, and maintain control over all stages of the learning process.

It is important to note that affinity has not been a static concept. It has evolved and undergone significant changes throughout a person's life, influenced by various factors such as individual intellect, experience, and interactions with others. Building harmonious relationships, which contribute to success in various aspects of life, is also a key factor (Sletten *et al.*, 2015; Gee, 2017). Therefore, as A. Wigfield & J. Eccles (2000) point out when discussing motivation, it is crucial to

have a deeper understanding of different contexts and be able to analyse their impact on learning productivity.

Traditionally, philosophy – viewing thought as a striving towards understanding – has distinguished three stages of human development, often mapped onto the figures of Hesiod's Prometheus, Aeschylus' Prometheus, and the notion of freedom of conscience. In Hesiod, Prometheus is a Titan who steals fire from the gods to give to humanity, symbolising the human aspiration for knowledge and independence. Over time, the individual's desire for knowledge is accompanied by the growing awareness of their creative capacity and potential to shape the world. Hence, Aeschylus' Prometheus is no longer merely a rebel but also a martyr, suffering for his convictions and embodying the strength of the human spirit. In the third stage, the individual reaches the highest level of development. They not only possess knowledge and skills but also understand the responsibility that comes with them. Freedom of conscience thus represents the capacity of a thinking being to determine their own moral principles and live accordingly. This philosophical concept reflects the evolution of human consciousness – from helplessness and dependency to knowledge, creativity, and ultimately, freedom. Freedom of conscience emerges as the pinnacle of this journey when an individual becomes the rightful master of their own destiny and is accountable for their actions. It is a struggle for individuality, independence, and selfexpression, with each of the three stages marking a significant step along this path.

M. He & X. Zhang (2023) write about how the dynamics of thought have influenced the relationship with affinity. Research by J. Liu *et al.* (2022) demonstrates analytical explanations of the evolution of affinity, the formation of consensus through social influence or social noise. An Australian team of researchers, A. Martin *et al.* (2025), emphasises that affinity is a fundamental psychological need and that effectiveness can only be achieved through full interaction with

others, as in the chain “teacher/lecturer motivation” to “student/applicant motivation” and ultimately to “employer motivation”. Consequently, the possible configurations of affinity expand significantly when elements such as self-efficacy, internal and external motivation, and mutual engagement are taken into account (Wigfield & Eccles, 2000; Sachse, 2024).

Historically, labour provided psychological release and became a core value – this is how *homo naturalis* began to assert itself. And success generated sources of wealth and economic independence. An individual who decided to break free and make their own choices bore responsibility for their actions and gained significantly more. The greater the knowledge, the greater the interest and the desire to do something. Achieving positive learning outcomes correlates not only with desire and behaviour but also with specific stimuli, which generate an image and a plan. An image represents accumulated and organised knowledge, while a plan presents an algorithm of actions and organised human behaviour. There can be many modes of activity and facilitating conditions. This dictates a mode of understanding nature to the individual. However, consistency and subordination in a strict terminological sense are crucial. In A. Sujoldzic’s (2009) psycholinguistic dictionary, the concept of “minimal effort” is presented. The law of least effort is reflected in how a person expends their efforts to achieve a specific goal. At each stage, a certain balance of minimalism is established: between the needs of communication as a general sphere of social life, which leads to optimisation in any communication; between the formation of behaviour, unique in its manifestation from the perspective of acquiring knowledge; and between consciousness and thinking, regulated by the brain, to reflect a certain image of any subject. Physiologically, the human brain is structured so that networks of neural cells connect, receiving information from various sources. This activates memory.

In today’s rapidly changing and information-rich world, effective learning is a key factor

for success. However, as M. Khine (2024) points out, another side of the coin is often overlooked: learning requires significant effort and time, which can lead to a loss of motivation and interest. Fortunately, some strategies minimise the effort required for learning and help achieve significant results. As noted by I. Vakulyk (2022) and S. Anayat & G. Rasool (2024), it is often essential to focus on a core idea, concept, or piece of information – a central attribute of cognition; to develop both a minimum and a maximum learning plan, which enables consistent progress without settling for partial success; to maintain self-discipline and persistence; and to find an internal drive – in other words, to answer the question: why am I doing this? In such cases, artificial intelligence often provides valuable support, bridging countless steps to make learning more efficient and enabling success with minimal effort (Blut & Wang, 2020; Del Giudice *et al.*, 2023; Marvi *et al.*, 2024). Knowledge, after all, is not merely a mode of human existence – it now encompasses new practices, technologies, skills, and mapped experiences.

Materials and Methods

This article presents the methodological approaches used to investigate the effectiveness of learning. The primary focus is on the integration of comparative analysis of motivation models (e.g., the ARC triangle and the hexagon) and the interpretation of philosophical concepts related to the thinking process. The role of abstraction and the use of existing models in forming a holistic learning system is explored. The effectiveness of learning largely depends on the ability to abstract from secondary details and the capacity to utilise existing models. Therefore, a holistic learning system is presented through the lens of affinity, the reality of being, and dialogue embedded in the communication process. The use of this approach allowed for the identification of key factors necessary for applying theoretical knowledge in practice.

The study utilised methodologies and concepts proposed by other authors, including

E. Tucker (2025) (the method of analysing literary sources to gather information and form the theoretical basis of the research), D. Morey & T. Frangioso (1997) (the method of observing the behaviour of the subject, modelling, and systematisation), and René Descartes (philosophical ideas on the analysis of the thinking process and its impact on learning, as knowledge management depends on social interaction). The architecture of the article involved a systematic analysis of traditional interpretations of communicative strategies and contemporary approaches relevant to learning practices. The study examined modern trends introduced in the context of “affinity”: the theory of expectation and value of motivation, first proposed at the turn of the century in the research of A. Wigfield & J. Eccles (2000); the psychological approach of R. Sachse (2024); informal and goal-oriented learning as discussed by R. Trinder (2017); knowledge management by R. Marvi *et al.* (2025), related to new technologies; argument structures developed by E. Onea (2024); and motivation as a science in the contemporary reading of M. Khine (2024).

This study employed the general scientific method of formalisation, as the described ARC construct correlates with functional and substantive knowledge, materialised on the foundation of competency-based learning. When learning motivation exists, practice finds its reflection. This means that each element of the ARC model contributes to the development of specific learning competencies. “Communication” facilitates the exchange of information and establishes a set of “rules” for conducting discussions; “reality” is formalised through simulated professional situations or a system of tasks that can generate manifestations of reality; and “affinity” accumulates a specific set of criteria necessary for assessing the motivation of pupils/students/applicants. This formal approach is not limited to a specific field of knowledge but is used as a universal methodological tool for processing and interpreting information. On the other hand, the logical connections between the three main components of the

ARC triangle generate new knowledge that can be encoded in the form of formal schemes.

Another method proposed in this research is abduction, as a probable explanation, based on understanding the logical semantics of the term “affinity” within the learning context. When there is emotional dependence, interest stimulates motivation, the value of affinity for personal development is realised, and the ability to communicate is necessary for the community. The metalanguage of the research became *lingua mentalis*, which formed deep meanings and developed a logical connection between communication, the reality of information perception, and the “harmony” of learning. When discussing mental language, it serves as a conceptual tool that helps achieve an understanding of “affinity” – a language of terms, constructed on grammatical rules, for describing and analysing the learning process. In this way, an attempt was made to go beyond superficial description and penetrate the essential reading of the secrets of effective learning with the involvement of minimal effort.

Results and Discussion

Affinity and the factors of learning optimisation

In her research on learning effectiveness, E. Tucker (2025) suggests considering the strategic approaches of the American Productivity and Quality Center (APQC) human resource planning and using four factors (processes, people, technologies, and time) that determine the effectiveness of the motivation function in modern organisations. In a survey, as E. Tucker (2025) notes, 300 L&D managers from around the world participated. It was found that successful organisations create a culture where learning is a continuous process, employee development is encouraged, and opportunities for lifelong learning are provided. Managers at all levels actively support the development of their teams, acting as mentors and creating conditions for professional growth. Employees are motivated to learn because they see value in it for their personal and professional development. Workers also actively share their

knowledge and experience and participate in collaborative practices and other forms of information exchange. Therefore, knowledge gained in the learning process is effectively applied in practice, for example, to achieve business goals. Technologies allow adapting the learning process to the individual needs of each learner, considering their learning pace, information perception style, and interests. Thus, it can be said that learning is accessible to employees anytime and anywhere. And, of course, the speed of these reactions is influenced by a catalyst, encapsulated in the term “learning culture”.

D. Morey & T. Frangioso (1997) propose not four, but six principles of effective learning, which are necessary for “aligning education”, and accordingly, this concept is encoded in a hexagon. This can be viewed as a tool for analysing and visualising learning motivation from various perspectives. Each of the six sides of this figure can represent a separate motivational factor or aspect that influences engagement and success in learning. These are the intrinsic and extrinsic, social, cognitive, emotional, and practical aspects of motivation. When intrinsic motivation is present, a person feels engaged in the process, they are interested, they see meaning in learning, and they enjoy expanding their knowledge and skills. Extrinsic motivation involves the desire for a favourable evaluation or praise. This is the influence of external factors, sometimes independent of the individual. The social motivation aspect reflects the influence of the social environment (e.g., being recognised within one’s group, receiving support from peers, or meeting the expectations of parents or teachers). As for the cognitive aspect, it is not just a surface-level “desire for knowledge and understanding”. It is the ability to find answers to interesting questions and to understand complex life concepts. The emotional side of learning can evoke positive emotions, such as curiosity, excitement, or satisfaction, which can contribute to engagement in learning, while negative emotions, such as fear, anxiety, or boredom, can reduce motivation. The awareness of the

practical value of learning (for example, to get a new job, improve one’s qualifications, or succeed in one’s career) creates a background learning environment that will contribute to everyone’s achievements.

The study adheres to the ideas of the simplest motivation model proposed by I. Vakulyk (2022), which is “encoded” into the standard ARC triangle – the “affinity” triangle. Affinity is a key factor in successful learning. This means that individuals who feel connected to the learning process are likely to be more motivated, making the learning more effective. There are many different motivation models, each offering its own set of principles and factors. It is important to consider both individual needs and the general factors that influence motivation, namely: intrinsic motivation (interest and enjoyment from learning), extrinsic motivation (grades, praise), social motivation (influence of the environment), cognitive motivation (desire for knowledge), emotional motivation (positive emotions), and practical motivation (recognising the value of learning). Additionally, the interests of students/employees should not be overlooked in order to enhance their motivation. It is also important to consider technologies, which play a crucial role in optimising learning, and the learning culture – as they impact the effectiveness of the process itself.

Effective learning: From concepts to dialogue

Behind every word lies not only its literal meaning but also an entire world of associations and images linked to it in human consciousness. This world of associations and images is called a concept. Concepts shape thinking and influence how the surrounding world is perceived, representing a mental structure that unites knowledge, experience, and emotions. They are dynamic and can change depending on cultural context and individual experience. The communicative space is a vast niche for interaction, with the conceptosphere serving as a kind of framework that structures this space and defines the rules of engagement for the participants in communication. The

conceptosphere influences which ideas are accepted or rejected and how they are understood. In the current context of learning (in a broad sense), it cannot be merely formal and institutionalised. The focus should be on creating conditions for learning and proposing effective processes to address educational situations.

To avoid directive teaching and receiving mere “closed” question responses from teachers/lecturers and to prevent passivity, it is essential to allow students/pupils/applicants to express their own ideas and listen to their viewpoints. It is important not to fear falling behind with the curriculum. In situations where time is limited, but the material (even if difficult to grasp) needs to be delivered, the lecturer can focus, rally the students, and the essence of the topic can be presented quickly, concisely, and uniquely. Thus, through empathy, bridges are built towards correct solutions and accurate answers.

The formation of cognition and the dependence of learning on teaching have a long history in modern education. Ideas and concepts are easier to implement when there is a tool for understanding. If a student (or pupil, or applicant) uses a familiar context during learning, they can facilitate memorisation, as the “mnemonic” of ideas is stored in the brain and activates existing knowledge schemas. Focusing on the monolithic nature of an idea, on playful-soft or strict presentation, depending on each specific case, and the conciseness of explanation, embodied in geometric miniatures (mostly from personal teaching practice), helps to form tools for management. When ideas and concepts are accepted and found useful, an exchange begins – this is another tool – the tool of implementation. Eliciting an emotional response is always possible through dialogue, as it is a fundamental human skill. Thus, the first component is communication. When an imposed channel of communication creates fabrications and deception, hatred arises, and communication channels are immediately destroyed. The ability to engage also contributes to success in learning. The lecturer needs to develop a universal tactic

for their actions, and create a special management mechanism, i.e., decide how to implement their influence to ensure understanding. Functional management elements can be employed. For example, when studying modern scientific terminology, Latin translations of classics, and relevant use of *sententiae*, a higher score can be awarded for agility; accuracy of translation based on personal experience, developed grammatical skills for recognising morphological and syntactic structures, or task completion using technical means – “who is faster”. That is, to find the most important factor (external or internal) that will interest the interlocutor. Collective work can also be directed by “dropping” interesting information.

Communication and interest lead to realisation. Phrases like: “I can independently (or with help) understand the topic”, “I can translate”, “In classes on other disciplines (e.g., anatomy, physiology, surgery, or pharmacology), I skilfully used the Latin terms I had already learned”, “And in history (or philosophy), we recited familiar catchphrases of ancient Greek philosophers and Latin masters of eloquence”, “How respectfully my parents observed at home as we learned the student anthem”. A series of such convincing phrases, contributing to success, albeit minor, instils faith in one’s abilities and the necessity to continue acquiring new skills. Children see concrete realisation, extrapolated not to “something vague”, “just because”, or “because everyone learns that way”, but into the reality in which they live. This forms the second component, which is reality.

As for affinity, the third and most essential component of learning, it should always be prioritised. The main goal is to establish a kind of harmony (or perhaps selectively capture, transform, and support interest, contributing to success; forming a sense of closeness; create an emotional resonance – this synonymous series of definitions can be continued indefinitely). It is only necessary to raise one vertex, and the other two will become higher. And the higher the other two vertices of the triangle are, the higher the figure itself will be. This is the simple yet complex

architecture of the proposed triangle. Thus, a cause-and-effect relationship of unity is established, encoded in the so-called ARC triangle (Affinity, Reality, Communication), which should be used in the educational environment.

The affinity triangle concept

The diagram (Fig. 1) details the author's proposed concept. The key figure in the diagram is a triangle, with each vertex having its own concise name – “communication”, “reality”, and “affinity”. These three vertices are interconnected: strengthening one influences the other two, creating a harmonious learning system. There are also two other elements – circles of different

colours – which symbolise levels of knowledge and the interaction of all components. Thus, the purple (inscribed) circle, *locus situs*, represents a specific moment of cognition or circumstances – a local situation. The large (outer, orange) circle represents a broader learning context, embodying social interaction, hence its name, *locus standi*. The key concepts surrounding the triangle are “concept sphere”, “learning and thinking”, and “cognition, ideas, transformation”, which could also be vertices of another triangle. The proposed visualisation illustrates the above-mentioned idea that effective learning and cognition are possible only with a balance between affinity, reality, and communication.

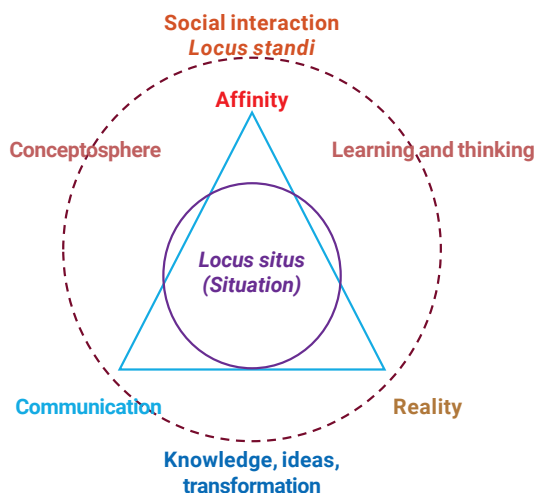


Figure 1. How the ARC triangle influences learning forms and methods

Source: developed by the author based on observations and personal research

The interpretation of affinity is similar to Descartes' *Cogito, ergo sum* in the context of the scientific worldview, as it is the individual who must control history in all its dimensions and create their own, adhering to the rules of existence and not accepting judgments that personally have not yet been understood. Just as cognition has its rational origin and ratio, so too can quantitative changes transform into qualitative ones, only by developing and transforming, replacing existing categories and altering them. The study does not

provide a chronological slice of so-called affinity but defines it through the lens of three unities, describing both external and internal factors of coexistence. If ARC are considered as segments and points of connection between three wholes, depending on the “classification” of the lengths of the sides, then the triangles may “compete”, surpassing one another concerning each other. The triangle can also be inscribed within a circle, just as the triangle can become a part of the circle – the Universe. This leads to entirely diametrically

opposed reflections on cognition, truth, and ideas – *Meditationes de cognitione, veritate et ideis*. The smaller circle represents a specific situation, a sort of *locus situs*, while the larger circle, superimposed onto the plane of the triangle, represents social interaction, allowing the integration of *locus standi*, *locus conjecturis*, and cosmology.

There are vast layers of information scattered throughout the conceptual framework of consciousness. It is necessary to be able not only to find them but also to grasp (take) them, to apply them associatively, to “sketch” a picture of the world in which the individual coexists with values, norms, priorities, traditions, etc., identifies with cultural patterns and subordinates their own life activities to certain forms of communication. Of course, the proposed affinity frame triangle can be changed – that is what frameworks are created for, to improve and refine them while adhering to the structure. According to the laws of dialectics, there are objective reasons for the change of any system. Just as good begets evil, and light emerges from darkness, so the sides of affinity can be not only a whole but also opposites, or mutually exclusive in their essence, and also different in quality. And any judgments, from the birth of an idea, would lose their right to exist if there were no subject of discussion, if people were completely indifferent to what to talk about and whether to voice an affirmative “yes” or “no”.

Euclid, who proved that one side of a triangle is always less than the sum of the other two, fully accepted axioms not because they were provable and primary but because he could not move forward and grasp the depths of things without them. Euclid placed the proof of the principles themselves on others. Thus, there is a kind of affinity framework that shapes the competency-based approach to learning. And generating new interpretations is a matter for each individual: *Feci, quod potui, faciant meliora potentes*. Some might object that the ARC triangle has too few starting points, so-called decisive points (vertices of the triangle), which are the starting points for creating internal and external conditions for forming a

positive attitude towards learning and the importance of motivation in learning. It is undeniable that other geometric figures can be generated from a triangle, but then the models of concepts and feedback of communicative connections that affect the results of personal development, guaranteeing success and professional growth, will also be different. The proposed triangle demonstrates the balance of three key elements (emotional connection to learning, reality of practical application of knowledge, and interaction of communication and exchange of ideas), from which it follows that effective learning cannot be reduced to a single factor. The entire learning process is a dynamic and harmonious system in which a change in one element affects the others.

When examining the concept of “affinity” within its historical context, it is crucial not to overlook the so-called parallel studies, which align with world-renowned philosophical ideas. This approach allows one to see how the idea of affinity has developed and been interpreted by various thinkers throughout history. For example, Plato, in his theory of forms, spoke of the existence of ideal entities to which human souls feel drawn. This can be seen as a kind of affinity between the soul and the world of ideas. Aristotle, on the other hand, explored friendship and other forms of interpersonal relationships based on mutual sympathy and respect. He also wrote about the affinity between people who share common interests and values. That is, even from the very beginning of this issue, there were different perspectives on its illumination. However, what is common to all these studies is that affinity is understood as a deep connection between people based on mutual respect, sympathy, and understanding. It is also important to note that the concept of affinity is not limited to interpersonal relationships. It can also relate to a person's attitude towards nature, be defined by a cultural area, influence the world of ideas, and so on. This idea is vividly demonstrated by the ARC triangle model, created based on observations and personal research, where the key segments

are declared by the concepts of “affinity”, “reality”, and “communication”.

The philosophical interpretation of “congenial labour” is also significant. Achieving even minimal success is possible only through psychological liberation. Success in labour generates sources of wealth and economic independence, and individuals who choose to step out of their comfort zone and make their own choices always gain significantly more. By visualising the necessary images, they create stimuli and strive to adhere to them, developing an algorithm of actions so that their actions are organised and knowledge is disciplined accordingly. That is when discussing a sense of affinity, a deep meaning is embedded in its interpretation: a responsible attitude towards learning, which generates new horizons for forming one’s own worldview, developed communicativeness (as self-expression), and the ability to think critically. All of this helps to build strong and harmonious relationships based on shared interests, sympathy, or mutual understanding.

Conclusions

Based on knowledge of the world, experience, and associations, each individual can form their own mental lexicon, which is an important component of linguistic and communicative competencies. The lexicon, like a worldview, ensures rapid processing of linguistic information and a deep understanding of language. A developing individual who strives for new knowledge forms three types of awareness within themselves: communicative, informational, and cultural. Someone who constantly develops and seeks new knowledge expands their communication boundaries, and new words embracing new concepts and associations. This process is continuous and occurs throughout life. Thus, a developed mental lexicon is a dynamic tool for successful competency-based learning, which is constantly enriched and improved, ensuring the development of key competencies. It serves as a guarantee of success for a developed personality and provides the foundation for new knowledge.

Thus, the essence of learning involves minimal effort, as described above. There are certain secrets to achieving the goal of effective learning. Only active learning, which involves the practical application of knowledge and skills, the development of critical thinking (even if sometimes against oneself), and self-development, contributes to effectiveness in the ratio of internal needs and learning practices. The ARC triangle – the closeness of views and ideas – influences communication transformations, forms shared and individual cognition, which is defined in the learning process. This is the minimum that must be adhered to when mastering new forms and methods of learning. In this way, the importance of a comprehensive approach to learning and personal development is emphasised, and attention is focused on the existence of various factors that influence human behaviour.

The ARC triangle should not be viewed as an overly simple learning model based on interferences that arise in the process of communicative acts, but as a philosophical view of learning that emphasises the active role of the individual in the cognition process, the importance of emotional connection to learning, and the need to consider context. This concept encourages the creation of more flexible and integrated learning systems that promote personal development and the formation of critical thinking. The more volitional effort is demonstrated in the formation of cognitive mechanisms, the more positive will be thinking, perception of images and symbols, better memorisation, and intellectual programming of the brain.

The prospects for further research on this topic are presented according to the subject area of application: for educational purposes to build lecture structures or as material for practical classes; to illustrate the visual base of textbooks; as factual material for future dictionary entries in psychology and pedagogy reference books; for further philosophical interpretations of the scientific worldview and understanding of communication processes, didactics, and

the nature of speech and language itself; to be considered in the application of expert assessments on teaching tools and the formation of competency-based approach emphases. Further research on this topic may include an analysis of contemporary scientific developments, such as research in the fields of psychology, sociology, and anthropology, which also address the concept of affinity. In addition, a comparative analysis of different cultural traditions, which have their own ideas about affinity and its sig-

nificance in human life, could be an interesting research direction.

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Мінімальне зусилля: секрет ефективного навчання та досягнення мети

Ірина Вакулик

Кандидат філологічних наук, доцент

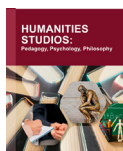
Національний університет біоресурсів і природокористування України

03041, вул. Героїв Оборони, 15, м. Київ, Україна

<https://orcid.org/0000-0002-4812-7719>

Анотація. Фокус дослідження полягав у взаємодії середовища навчання із діяльністю як системою: чому потрібно вчитись, як потрібно ставитись до вивчення наук, на які результати можна очікувати від бажання чи небажання едукції, у який спосіб можна досягти бажаного результату, щоб вишкіл як ретельність став самодисципліною. Автор провела глибокий зріз на межі філософії, психолінгвістики та педагогіки. Це дозволило окреслити дві основні функції – експлікацію наукової картини світу та виявити концепти організованої свідомості, закладені у трикутник ARC, який розрізняє поняття «афініті», «реальність» та «спілкування». Метою роботи було презентувати, як різні типи діяльності людини формують особистість у процесі спілкування та навчання (не лише удосконалюються комунікативні навички, але й пізнавальні можливості та особистісне зростання). Використано такі методи, як дистрибутивний аналіз (спрямовано на встановлення сполучуваності складових ARC triangle у можливих контекстах), метод моделювання не як математичний розрахунок систем, а штучно створений абстрактний та ідеалізований образ спрощеного відтворення об'єкта, екстрапольованого на різні ситуації навчання, пізнання наслідків та дій, а також модель як знак (геометричне зображення концептуального трикутника). У статті розглянуто діяльнісне ставлення споживача інформації (учня/студента/абітурієнта) до засобів міксованої комунікації, яка не обмежується соціальною чи етнічно ідентичністю, а пролонгується каналами вокально-візуально-тактильного зв'язку. Фактичні результати дослідження довели, що індивідуальна свідомість, типи мислення та закони комунікації – це вічні істини, яких потрібно дотримуватись, набуваючи нового досвіду. Запропоновано комплексний погляд на навчання та розвиток особистості, поєднуючи різні аспекти: компетентнісний підхід, концепцію спорідненості, мотивацію тощо. Проаналізовано, як розвивати особистісні якості, як вибудувати соціальні зв'язки, а також як досягати успіху, використовуючи психологічні механізми, закладені в основі поведінки сучасної людини

Ключові слова: спорідненість (афініті); комунікація; фрейм; трикутник APC; компетентнісний підхід; навчання



Modelling explanation in the space of multiple representations of the flow of time

Oleksiy Polunin*

Doctor of Psychological Sciences, Professor
National University of Life and Environmental Sciences of Ukraine
03041, 15 Heroiv Oborony Str., Kyiv, Ukraine
<https://orcid.org/0000-0001-9058-3200>

Abstract. Explanation is an integral component of philosophical, scientific, and everyday thinking. Consequently, modelling explanation and understanding the sources of its variability hold significant importance in philosophy, the behavioural and natural sciences, as well as in the narrativisation of societal events through mass media. To explore one of the sources of explanatory variability, this study examined the modelling of explanation within the space of multiple cognitive representations of the flow of time. Formal modelling was used as a method based on existing theories of explanation, and the role of the cognitive representation of the explanans (the explaining factors) and the explanandum (the thing being explained) was made clear in the dimension of time. This approach was combined with an analysis of experimental studies on the influence of cognitive representations of the flow of time on object evaluation, followed by the integration of theoretical models and experimental findings. Based on theories of explanation, it was concluded that despite their diversity, they explicitly or implicitly rely on the unfolding of events over time, with the flow of time playing a crucial role. Given the cognitive system's capacity to generate multiple representations of the flow of time and the fact that shifts in these representations determine variability in the perception of the surrounding world – and consequently in the explanans and explanandum – the transition from the conventional singular flow of time in explanatory theories to its representation as a set of distinct, independent cognitive representations with specific properties was substantiated. For various explanatory theories, the significance of this transition from the conventional model of the singular flow of time to the conceptualisation of time as a multiplicity of cognitive representations was explored. The proposed introduction of multiple representations of the flow of time opens new avenues for further theoretical inquiry. In practical terms, it brings explanatory models closer to actual human thought and behaviour, thereby enhancing their reliability and predictive value

Keywords: theory of explanation; cognitive representation of time; multiplicity of time representations; variability of thought; cognitive systems

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*Corresponding author



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Introduction

The study of the structure of explanation, primarily scientific explanation, constitutes a distinct area of philosophical inquiry. Within this field, a range of theories of explanation are discussed, namely C. Hempel's deductive-nomological theory, W. Salmon's statistical theory of explanation, a theory of explanation that relies on mechanistic causality, and P. Kitcher's unification approach. The existence of diverse theories of explanation, as well as current debates regarding their further development, highlight the relevance of the proposed study. The human mind explains the surrounding world because, compared to an unexplained world, an explained world is perceived by the individual as not only comprehensible but also safer and more reliable.

Alongside the production of explanations, opportunities for transforming the world emerge. Even if an explanation is false, its stabilising function persists due to belief in its validity. Examples of this include a range of explanations, both social, medical, and natural phenomena, that have been proposed throughout human history. Equally striking examples are found in religious thought: the medieval idea of going to hell for sins and the possibility of avoiding hell through money paid to the church; the justification of the Inquisition's right to kill for heresy as a form of dissent. Furthermore, the human mind can spontaneously generate explanations that, from the perspective of formal logic, may be incompatible yet are socially acceptable and adopted by the individual for application. Explanations are initially formed by the cognitive system independently of whether they are true or false or whether they will ultimately be accepted by the subject and society. The next action of the mind involves evaluating events and objects. This is crucial for affirming the validity of the chosen explanation and/or for assessing courses of action to establish norms for living. Beyond everyday thinking, when it comes to scientific thinking, for example, in medicine, law, or economics, the formation of explanations acquires even greater

significance (Petrov, 2022). The explanations of phenomena developed in social life form the basis for the development of regulatory norms, predictions, and standardised protocols for action. Scientific explanations are presented as theories, as specific relationships between qualitative and quantitative characteristics of objects and processes, and as natural laws. However, several important questions can be raised. Is there a universal theory of explanation or a universal model for forming explanations? How does the conceptualisation and mental representation of metaphysical categories influence the production of explanations, their stability, and their reliability? In this context, it is proposed that the study of cognitive representations of basic categories is a factor that will contribute to the development of existing theories of explanation.

A. Skiles & K. Trogdon (2021) argue that grounding has an explanatory component in the sense that metaphysical explanation is a form of grounding. Metaphysical explanation establishes a connection between facts. On the other hand, it should be noted that what constitutes a fact is determined by the current set of metaphysical categories; any connection, being an extension, is reflected in the dimension of time. Consequently, there is a need for a deeper investigation into the origins of grounding. M. Kortabarria & J. Giannotti (2024) consider the relevance of explanation as a marker of grounding, primarily focusing on scientific grounding. They raise questions about the role of grounding in metaphysics and the nature of grounding within metaphysics. They distinguish between grounding and scientific explanation, noting their certain (a) independence and (b) instrumental role of grounding. The contribution of M. Kortabarria & J. Giannotti (2024) lies in their original argument that grounding holds a special status in science. They analyse the conventional view of metaphysical explanation as a guide to grounding. They note that grounding plays a key role in the scientific understanding of reality, not just in metaphysics. In their understanding, the

concept of grounding is both deterministic and explanatory.

D. Kim (2025) highlights the relationship between metaphysical modality, essence, and explanation. In doing so, attention is paid to essence as a super-explanatory property. However, he points out the problematic nature of using the category of essence for explanation. It is worth noting that both essence and modality can be presented as dependent on a temporal variable. Essence is defined as a time-invariant characteristic and, therefore, is defined, among other things, through time. Modality reflects becoming in time. Therefore, within this approach, the need to study the role of time in explanation becomes evident.

N. Barrett (2023) highlights the role of value in explanation, revealing the connection between the former and affect. From research on intertemporal evaluation and intertemporal decision-making, it is known that value and effect are modulated by the flow of time. Furthermore, the explanation itself must also be modulated. Therefore, in this case, there is a need to study the role of the mental representation of the flow of time in modelling explanation. Explanation, regardless of the theory upon which it is based, is grounded in a specific set of metaphysical categories, including space and time. These categories not only define the boundaries of perception but also determine the range of experience available for explanation. Creating explanations without these categories and outside the boundaries they establish is difficult to imagine. However, it is important to emphasise that despite such a fundamental role of metaphysical categories, they themselves are difficult to explain. A striking example is the question "What is time?" – a subject of philosophical debate for more than two thousand years.

L. Ross (2023) raises the question of limitations in explanations, including scientific explanations. Conventionally, two main types of limitations on explanations are identified, namely, explanations based on (a) the distinction between the possible and the impossible, and (b) explanations based on limitations of the mechanism of the phenomenon

being explained. The former explanations rely on a boundary that defines what is impossible. The latter focuses on the functional or structural limitations of a specific mechanism that underlies the explanation. For example, the perception of colours by the organ of vision is determined by the functional properties of the retinal receptor cells and their distribution across the retina of the eye. L. Ross (2021) proposes a new typology of explanations and distinguishes the following types of explanations: (1) limitations defined by laws, (2) mathematical limitations, and (3) causal limitations. In her view, this classification of limitations better reflects the uniqueness of limitations regarding the production of explanation.

The thesis that the cognitive system can generate a multitude of time representations, each with different properties, creates a foundation for reconceptualising time as a philosophical category, as a category used in the natural sciences, and, most importantly, renews its understanding in cognitive research. Therefore, the problem lies in determining whether the multiplicity of cognitive representations of time acts as a factor that creates a basis for the further development of theories of explanation. Given the universality of the category of time and its widespread use in modelling regularities, the problem posed concerns the entire range of the aforementioned theories of explanation. The subject of this research was the multiplicity of cognitive representations of the flow of time as a factor that constitutes explanation and influences the theoretical modelling of explanation. In this research, following J. Woodward's (2018) explanation was viewed as a sentence that connects the explanandum (the explanatory target) and the explanans (factors that do the explanatory work) and reveals the interdependence of the former and the latter. This article aimed to reveal the potential of introducing multiple representations of the flow of time into various theories of explanation and to clarify the potential advantages in modelling explanation when transitioning from a conventional singular to multiple representations of the flow of time.

Literature Review

P. Audi (2012), highlighting the constitutive role of the explanans concerning the explanandum and explanation as such, states that the proposal of the explanandum consists of nothing other than the creation of an explanation: "It is natural in such cases to say that the explanans or explanantia are constitutive of the explanandum, or that the explanandum's holding consists in nothing more than the obtaining of the explanans or explanantia." Later, M. Raven (2020) points out the need to reveal the nature of grounding itself. It is noted that grounding also relates to non-causal but determining explanations. Such an explanation is designated as constitutive.

Explanation and the representation of knowledge occur in a multidimensional space of basic concepts, such as time, space, mass, value, essence, phenomenon, and so on. Basic categories determine how the phenomena under investigation are represented and explained. This involves a dependence on basic categories for the explanation of natural phenomena, events in social life, and personal experience. Time is one of those fundamental categories that is used in a range of explanations and the formulation of the laws of nature and social life. As B. Dainton (2001) notes, time is conceptualised in philosophy in at least three different ways: eternalism, possibilism, and presentism. Despite significant differences between these models of time, C. Callender (2010) believes that from an empirical point of view, they are similar, with the divergence between them lying in their explanatory potential regarding temporal data.

The temporal dimension forms the basis for developing research methods in various sciences, interpreting data, and modelling diverse processes and complex social relations. These, in turn, create a demand for the production of explanations. Most metaphysical categories, it is generally believed, are not susceptible to actual rational definition. However, this does not preclude posing the question of how the reconceptualisation of a basic category, such as time, will affect the

modelling of explanation. Therefore, this article examined the impact of the reconceptualisation of the category of time on the modelling of explanation. The argument stems from the proposition that time and the experience of the flow of time are products of information processing by the human cognitive system. Of course, the proposition of time as a product of the human mind is not entirely new. Aristotle already pointed to the role of the individual in comprehending the flow of time. St. Augustine believed that time is not real but exists only in the human representation of the world. The contemporary philosopher B. van Fraassen (1985) sees the basis of time in the human mind's ability to form judgments. C. Callender (2010) and several other researchers also emphasise the role of the subject through whom the experience of the flow of time is formed. C. Callender (2011) suggests that time can even be removed from the physical model of the world. Given the absence of a specific organ in the body for perceiving time, J. Gibson (1975) also points out that time is constructed by the cognitive system itself. Taking into account the role of the subject in forming temporal experience and the experience of the flow of time, considering the variability of approaches in defining the category of time and the different conceptualisations of the flow of time, the proposition is made that the cognitive system can form more than one representation of the flow of time. This ability is also indicated by experimental studies (Polunin, 2011).

The importance of the temporal dimension is also highlighted in the publication by I. Kolvoort *et al.* (2024). They model the variability of causality assessment. In doing so, they note that this involves within-participant variability. The researchers explain this variability through a multitude of Bayesian Mutation Samplers, which reflect the cognitive processes involved in forming a conclusion about the presence of a causal link. Given the important role of time in establishing causal relationships, the question arises: does the cognitive representation of the flow of time contribute to such variability? Time

and temporal experience, due to their dynamic nature, could well be a source of within-participant variability.

X. Wang *et al.* (2023) directly point to the importance of the temporal dimension for producing explanations. They state that humans view the world through a “lens of causality”. Therefore, in their opinion, modelling causality is particularly important in learning and reinforcement learning (positive stimulation of learning). The temporal plan of reinforcement determines the success of learning, and the temporal dimension defines the boundaries of establishing causality. From this perspective, the role of causal explanation as a factor in learning is revealed.

The dominance of causal explanations in scientific research does not preclude research related to non-causal explanations. The study of A. Wayne (2022) is dedicated to asymmetry in non-causal explanations. The violation of symmetry is considered a key factor in the explanation. The proposed resolution of asymmetry relies on the Counterfactual Theory of Explanation. The essence of counterfactual thinking necessarily relies on the determination of “before-after” relationships and thus on determination in time. Therefore, this article also underscores the importance of studying time as a factor in the production of explanation. The elements of any non-causal explanation, in their existence, necessarily contain extension. One of the metaphysical categories that reflects extension and is included in most grounding is time. At the same time, it is necessary to distinguish between theories of time, cognitive representations of time, and the direct experience of the flow of time (Polunin, 2011). J. Freyd (1987; 1992) demonstrated that even static stimuli at the level of cognitive representation have a temporal dimension. Based on this proposition, it is necessary to recognise the presence of a temporal dimension for the components of both topological and noncausal explanations.

In addition, it should be noted that the laws of nature and human-created regulatory norms, as well as relationships of causality, are

conceptualised within a temporal dimension. Also, the boundary of “possible-impossible”, interpreted as the boundary of being, has a temporal reflection. The temporal dimension of thought determines the boundary of the being of the object of thought and, therefore, the boundary of the possible. Objects thought of outside of time are rather thought of as being outside of existence. The latter indicates the dependence on time and limitations for explanation. An additional factor is the uncertainty of time itself, namely the open question “What is time?” and the potential uncertainty of temporal relationships between events – this represents an additional important limitation in the production of explanation.

From a generalisation of the works cited, the significant role of time in the production of explanation becomes evident. The temporal dimension of experience forms the space in which the explained event, the explanans, and the disclosure of the connections between them through the formulation of explanation are represented. At the same time, grounding, the description of explanatory properties, the disclosure of essence and modality, the boundaries of the reality of explanation, and the concept of causality all rely on time, making a deeper study of the role of time in theories of explanation urgent.

Materials and Methods

As a research method, the author relied on: conceptual analysis and formal modelling of explanation based on existing theories of explanation and psychological experiments on the cognitive representation of the flow of time; analysis of experimental studies to understand the specific features of the influence of the cognitive representation of time on the representation of an event in the flow of the subject’s experience of explanation; integration of theories of explanation from philosophy and experiments on intertemporal decision-making from psychology. The first revealed a common feature of most explanations, namely their modelling in the temporal dimension; the key role of time for the representation of the

explanandum and explanans was demonstrated. The analysis of experimental studies helped to prove the coexistence of several representations of time, each of which can influence the description of the explanandum and explanans. As a result, the multiplicity of representations of the flow of time creates a basis for the variability of the reflection of the same event in the flow of experience and, therefore, for the variability of explanation. Summarising the arguments presented, the author proposed the proposition that it is necessary to improve theories of explanation, taking into account the multiplicity of representations of the flow of time.

Given the theoretical nature of the study, particular attention was paid to the analysis and synthesis of existing scientific works, philosophical concepts, and empirical data concerning the cognitive representation of time and theories of explanation. To achieve this, a method of comparative analysis was used, which allowed for the identification of commonalities and differences between various approaches to understanding the flow of time and its impact on the formation of explanations. Additionally, a method of conceptual modelling was employed, enabling the creation of abstract models that reflect the key aspects of the phenomenon under investigation. These models were utilised to demonstrate the possibility of the existence of multiple representations of the flow of time and their influence on the variability of explanations. Furthermore, a critical analysis of existing experimental studies concerning the cognitive representation of time was conducted to identify their methodological limitations and opportunities for integration with theoretical models of explanation.

The starting point of the research was the proposition that the experience of the flow of time is a product of the cognitive system's activity. Subsequently, relying on previous research, the cognitive system's ability to produce a range of qualitatively different mental representations of the flow of time was demonstrated. As a next step, the idea of the multiplicity of cognitive

representations of time was taken as a foundation for the further development of theories of explanation. In this way, the prospect of further development of explanation modelling and the development of relevant theories was substantiated.

Results and Discussion

Time as a dimension of thought and key theories of explanation

Despite recent research indicating the necessity of studying time in theories of explanation, this problem was established much earlier. It stems from the role of time as a metaphysical category in modelling events and thus in explaining the world. Metaphysical categories are described by their stability and prolonged immutability throughout years of research. Therefore, it is appropriate to turn to earlier theories of explanation, which remain influential to this day. Contributions to the theory of scientific explanation are presented in the works of C. Hempel (1965), W. Salmon *et al.* (1971), and P. Kitcher (1989). In the last century, C. Hempel & P. Oppenheim (1948) and C. Hempel (1965) proposed the deductive-nomological model (DN model) as an approach to developing explanations. According to this model, an explanation consists of an explanandum – a sentence describing the phenomenon to be explained – and an explanans – a set of sentences that convincingly reveal the explained phenomenon. According to this model, an explanation must reveal why the explained phenomenon (explanandum) occurs, must specify the conditions $C_1, C_2, \dots, C_k$ under which it occurs, and through the action of which laws ($L_1, L_2, \dots, L_r$) it becomes possible. According to C. Hempel & P. Oppenheim (1948) and C. Hempel (1965), laws play a key role in the explication of the concept of explanation. Later, P. Kitcher (1989) developed a unification approach to explanation. According to him, generalisations (laws) and deductive structures are necessary conditions for the successful construction of an explanation. Generalisations in the sense of P. Kitcher (1989) rely on the concept of the flow of time and the timeline.

Most laws in the natural and social sciences rely on the concept of a singular linear flow of time. Agreeing that laws are defined regularities that satisfy certain conditions, it should be pointed out that the establishment of any regularity relies on basic categories, primarily time and space. It is also worth considering the contribution of J. Freyd (1987; 1992), who experimentally demonstrated that any cognitive representation includes a temporal dimension. Therefore, any law, being reflected in the human mind, must explicitly or implicitly include a temporal dimension, the dimension in which it unfolds and acts. The cognitive representation of the circumstances and conditions of the explained phenomenon is also subject to the influence of the current representation of the flow of time. Therefore, the explanandum and explanans, as well as the properties of relevant objects – all of them are presented in a specific representation of the flow of time. Moreover, they may be dependent on the latter at the level of subjective representation. In this regard, the reconceptualisation of time as a metaphysical category and changes in the representation of time in the cognitive system of the thinking subject is very likely to lead to the reformulation of certain laws, at least in the sense of the DN model of explanation and the unification approach to modelling explanation.

Although C. Hempel & P. Oppenheim (1948), C. Hempel (1965), and other proponents of the DN model do not consider the category of causality to be key, several modern scientific explanations cannot do without the use of this category. Time is the dimension in which the connection between cause and effect is established. Events linked in time form a causal chain. Therefore, it is appropriate to consider that the category of causality may also be influenced by the reconceptualisation of the concept of time. Contrary to C. Hempel, at the level of both everyday and scientific thinking, the decisive role of the category of causality in constructing explanations is evident in most cases in Western culture. It is necessary to distinguish between causality studied at the perceptual level

and causality reflected at the level of cognitive representation. This article deals with the concept of causality, which goes beyond perceptual processes and relies on the cognitive representation of the flow of time.

The explanation is typically a sentence describing past experience. K. Craik (1943), J. Freyd (1992), and F. Keil (2006), and therefore psychologists and philosophers, believe that explanation originates from the past but is created to predict and control the future. It is appropriate to consider that this linking of the past, present, and future in explanation is a manifestation of a cognitive mechanism to ensure subjective certainty, a manifestation of cognitive assurance of the constancy of an individual's existence. The latter is based on the picture of an already understood world, formed through explanation. The explanation of the past has another function. The explained past can be “set aside” as an understood experience. It loses urgency, no longer “disturbs” the present, and thus frees up cognitive resources for processing current information and information relevant to predicting the future. In this sense, the explained past, to some extent, frees the individual from the burden of the past. The future, presented through a clear and acceptable explanation, not only makes expectations more understandable but also indicates a path to action to achieve the future. All this at least partially reveals the role of the representation of time in constructing explanations and modelling causality. At the same time, as the research of O. Polunin (2011) proves, it is advisable to consider the ability of the cognitive system to form separate and divergent cognitive representations for the past and future modes of time.

Both causal relationships as such and objects or events included in causal relationships are subject to the flow of time, namely modulation through the action of a specific cognitive representation. The properties of the cognitive representation of the flow of time determine how an object or the relationships of objects will be presented at different temporal distances. This

dependence on the representation of an object or relevant relationships on the current cognitive representation of the flow of time leads to possible changes in the reflection of both the object and the relationships. For example, O. Polunin (2011) described the process of proposition ageing, which significantly reduces the subjective value of an object or event. This ageing may result in the removal of this object (or event) from the list of candidates for the role of cause. Similarly, a certain event could be eliminated from the list of candidates for the role of effect. Even if one agrees with the view of W. Ahn *et al.* (1995) that when searching for the cause of an event, a person first seeks information that uncovers the relevant mechanism rather than information about covariate factors, it is still reasonable to assume that each mechanism is represented in the temporal dimension, meaning its functioning may depend on the current representation of the flow of time. This dependence of explanation and causal relationships on the representation of the flow of time indicates possible variations in the conceptualisation of the former in the event of a change in the current representation of time and its reconceptualisation.

Conventional concept of time and multiplicity of representations of the flow of time

The idea of modularity proposed by J. Fodor (1983) has gained widespread acceptance. For example, S. Dehaene *et al.* (2003) successfully apply it to describe modules for processing numbers. A. Öhman & S. Mineka (2001) rely on it to describe a subsystem for processing emotions. L. Hermer & E. Spelke (1996) use this idea to study a module responsible for processing spatial information. Similarly, a module responsible for processing temporal information should be identified in the cognitive system. According to the proposition of modularity, mental phenomena arise in the course of information processing. H. Barrett & R. Kurzban (2006) develop the proposition of modularity and introduce the assumption of the presence of functionally specific cognitive

mechanisms. Therefore, it is appropriate to identify a functionally specific module responsible for processing temporal information, including the formation of a cognitive representation of the flow of time. Moreover, this module of the cognitive system can generate not one but several representations of the flow of time.

To test this thesis, a series of experiments were conducted (Polunin, 2011; 2016), which studied the change in the value of an object (money) depending on its representation in different representations of the flow of time. Cognitive representation is activated by a specific formulation of the problem situation for the test subject. In this case, the mathematical model of the studied moment of time remains unchanged. Based on the results obtained, the author identified several cognitive representations of the flow of time, for example, the flow of time modelled from the first person perspective and the flow of time modelled from the third person perspective, situational and propositional flow of time, and some others. Each of the mentioned representations of the flow of time is described by its own characteristics and, therefore, in a specific way, influences the intertemporal presentation of a particular object in the cognitive system. The representations of the flow of time from the first person perspective and the third person perspective outline the difference between the value of a time interval modelled “for oneself” and “for another”. The representations of the situational and propositional flow of time differ to some extent, similar to how the ancient Greek gods of time, Kairos and Cronos, differ. Situational time flow reflects an individual's existence at a specific moment under particular conditions and possibilities. Movement within situational time occurs in “jumps” from one situation to another. In contrast, propositional time flow emphasises continuity, a gradual flow, and the connection of this flow to a proposition or an object's properties. The research examined the value of a monetary proposition. It was found that within situational time flow, the proposition's value remains relatively stable, whereas

within propositional time flow, the proposition's value undergoes significant changes, specifically decreasing towards zero. Consequently, the explanatory potential of the proposition, as a factor influencing an individual's behaviour, varies depending on its representation within different time flow frameworks. The same monetary proposition, when presented within a situational time context, might encourage an individual to accept it, whereas the same proposition, when presented within a propositional time flow, holds no interest for the individual and, therefore, does not alter their behaviour.

It is worth noting that L. Boroditsky & A. Gaby (2010), L. Boroditsky (2011), M. Chen (2013) and other researchers also point to the ability of the cognitive system to produce different representations of the flow of time. However, all these studies concern either the production of different representations of the flow of time in different cultures or differences in the representation of time depending on the languages used in different groups of test subjects. On the other hand, O. Polunin (2016), in his experiments, showed the possibility of producing different representations of the flow of time in people who speak the same language and belong to the same culture, which is a significant difference from the mentioned studies of colleagues and emphasises the novelty of the presented approach. These results indicate that the same cognitive system can produce several representations of the flow of time, which can be activated as independent cognitive formations.

Each representation of the flow of time determines the reflection of temporal processes for the same object in its own way. In this context, a temporal process is understood as a change in the cognitive representation of an object caused by the subject's current representation of the flow of time. In this sense, the temporal properties of an object become dependent on the current representation of the flow of time. It should be emphasised that the subject, under certain conditions, can also assume the role of an object in

the current representation of the flow of time. Because of this, as shown by O. Polunin's (2011) research, the representation of the subject itself in their own cognitive system can change significantly. In general, cognitive representations of the flow of time specifically manifest their properties concerning: (a) the subject themselves, (b) other people, (c) the situation as a whole, (d) an external isolated object of inanimate nature, (e) the parameters of a proposition, which can be (e1) temporal in nature (time mode, time distance, direction of time flow) and (e2) non-temporal in nature (absolute or relative characteristic). It should be emphasised that the multitude of different representations of the flow of time is not evenly distributed on the conventional abstract timeline. This means that several different representations of the flow of time can be applied to different segments of the conventional timeline. The latter is determined both by the properties of the representations of the flow of time and by the real and/or imaginary position of the subject on the timeline, as well as by the mode of time used to describe the problem.

The activation of a particular representation of the flow of time is determined both by the parameters of the description of the stimulus situation and by the personal perspective on viewing the situation in the temporal dimension (the subject's location on the abstract timeline). The formal properties of the verbal description of the problem situation, namely the time mode, temporal distance, properties of the objects and subjects involved, focusing attention on the situation as a whole or a specific object, determine which representation of the flow of time will be activated by the cognitive system to process the current problem task. Thus, before applying a particular representation of the flow of time, the cognitive system analyses the current task for several markers: time mode, the temporal meaning of individual words (for example, growth, decay, expectation), markers of general and local time flow, and markers of situational or propositional time flow. It is assumed that when activating a

particular representation of time, the cognitive system first determines the distinction between situational and propositional time flow, then determines the perspective from the first or third person, and only then considers other parameters.

Multiplicity of time representations and theories of explanation

The regularities of human behaviour are the focus of researchers in a wide range of disciplines – Psychology, Psychiatry, Sociology, Anthropology, Economics, Philosophy, and Cultural Studies. Most of these regularities are described based on the concept of time. Therefore, the reconceptualisation of time and the introduction of multiple representations of time will affect the establishment, description, and interpretation of these regularities. For example, regularities that rely on the activation of situational time flow should not coincide with regularities determined by the activation of propositional time flow. Similarly, differences in behavioural regularities established on the representation of the flow of time from the first person perspective and the third person perspective should be expected. Such differences are based on the specificity of processing temporal information within each of the representations of its flow. At the same time, the relativity of the description of an event and its dependence on the current representation of the flow of time is demonstrated.

However, the question remains: what exactly does the introduction of multiple representations of time bring to theories of explanation? This innovation carries additional explanatory potential in cognitive science and philosophy. T. Lombrozo (2006) believes that explanation includes two properties: “explanations accommodate novel information in the context of prior beliefs, and do so in a way that fosters generalisation”. The introduction of multiple representations of time marks another path. Replacing the previous conventional use of a singular flow of time opens up new ways to model explanation. There is a transition from the singularity of explanation to its predetermined multiplicity with the possibility of

finding the optimal explanation. In this case, multiplicity is assumed from the very beginning of the formulation of the explanation through the multiplicity of representations of the flow of time. For example, in the unification approach, regularities will take on a significantly different appearance if they are formulated separately for time flowing as situational and for time flowing as propositional. In statistical theories of explanation, the accumulation of statistical information will also depend on the representation of the flow of time used. The outlined influence of the representation of the flow of time on the formulation of explanation also has epistemological value because it reveals the contribution of the cognitive system's property to the act of cognition. A new aspect of the relativity of explanation is also opened up, namely through possible transitions between different representations of the flow of time. This is not just abstract relativity but relativity that can be verified by empirical methods.

At first glance, the introduction of multiple representations of the flow of time leads to an increase in the variability of the content of the explanatory text, to the expansion of the array of explanans. The initially singular factor – the flow of time – is replaced by a whole array of specific representations of the flow of time, the properties of which are not isotropic and which, moreover, are not equally involved along the imaginary timeline. Each of these representations of time has its own impact on the reflection of the explanandum and explanans in the cognitive system. However, since each individual representation of time is characterised by a more precise specification of its properties than the conventional singular flow of time, it is expected that the reflection of the explanandum and explanans in time will be more accurate. Of course, the introduction of multiple representations of time instead of a singular time leads to an increase in computational operations for justifying the explanation, but in the modern digital age, this is not an insurmountable problem. For example, when considering an explanation from psychology, sociology, economics, or

law, one might ask: will this explanation improve with the introduction of multiple representations of the flow of time? In the author's view, multiple representations of time will help identify temporal processes relevant to the explanandum and explanans, the conditions of their course at the level of cognitive representation. Ultimately, this will help to create several competing models of explanation and choose among them the most optimal, closest to real behaviour.

The multiplicity of temporal processes, described by an array of representations of the flow of time, increases the variety of subjective intertemporal evaluations of an object. Instead of a conventional singular correspondence between different moments in time, multiple correspondence arises in the representation of the object. As a result, multiple descriptions and, consequently, multiple explanations of the same phenomenon become possible. Given the multitude of existing theories of explanation, the question also arises as to whether the multiplicity of representations of the flow of time can be applied to each of the theories of explanation. If one agrees with the conclusions of J. Freyd (1992) regarding the temporal dimension of cognitive representations and her view that each explanation has its own cognitive representation, then the application of multiple temporal representations to any theory of explanation must be accepted. Of course, the question of the level of influence on a particular theory of explanation must be resolved in each individual case, including by methods of experimental philosophy. However, this task is beyond the scope of the present article.

Conclusions

The reflection of actions in time and the presentation of knowledge in time is a fundamental property of the human mind. This reveals the meaning of changes associated with the reconceptualisation of time and the introduction of multiple representations of the flow of time into the modelling of explanations. The proposed multiplicity of time representations determines

intraindividual variability in the reflection of the world. It also describes differences in behavioural reactions to the world. Through the multiplicity of representations of the flow of time, a basis is created for the multiplicity of perceptions of the same event or connection between events. Thus, a basis is formed for the multiplicity of their explanation within one cognitive system. In this sense, the representation of time should be understood as a "servant" of the mind created by the mind to ensure flexible behaviour, adaptive modelling, and understanding of the world. The proposed introduction of multiple representations of the flow of time redefines the temporal connection between the explanandum and the explanans. The explanans and the explanandum can be represented in different representations of the flow of time. This creates a significant discrepancy in their temporal representation, which opens up a new horizon for further theoretical and empirical research. Namely, it concerns the modelling of explanation, its perception by the individual, research on the modelling of causality, and intertemporal properties of explained phenomena and objects in the space of multiple representations of the flow of time.

At first glance, the conventional concept of a singular flow of time appears to be a universal thought. Its universality is based on the impression that it itself is beyond the influence of time. This atemporality in the understanding of time can be dangerously misleading. On the one hand, the timeless, almost eternal truth of singular time guarantees the stability of everyday existence and the constancy of world development. On the other hand, it reduces the likelihood of going beyond convention and becomes an obstacle to the creation of new knowledge, new modelling of the world and a new organisation of human existence. Interpreting time as a category created by the cognitive system for modelling the world and as a tool for better information processing, and therefore for better adaptation in the world, one cannot exclude further development in the modelling of dynamic processes by the cognitive

system, including overcoming the indicated atemporality of time. It is already about modelling not through singular time, but through multiple representations of the flow of time. Such a step, for example, makes possible a new understanding of the nature of spontaneity as a transition between representations of the flow of time opens up new horizons in the modelling of explanation, causality and dynamics. In applied sciences such as psychology, law, economics, and political science, this allows for the raising of new theoretical questions from the perspective of the described multi-temporality.

Modern explanations of patterns of thinking and behaviour have been developed within the framework of a conventional singular flow of time. However, the multiplicity of representations of the flow of time expands the boundaries of the known intertemporal variability of explanation. It adds, at the very least, a special form of variability in the representation of the subject and the objects under study in the temporal dimension. As a result, the array of possible explanations is significantly expanded. One of the important limitations of the proposed approach cannot be ignored. The proposed approach, to some extent, does not apply to mathematical explanations, at least until they include time as a variable. The fact is that

mathematical explanations are, in most cases, considered non-causal and independent of time. The introduction of multiple representations of the flow of time opens up new opportunities for research on explanation within such a new direction as experimental philosophy. First of all, the satisfactoriness of the explanation, the conditions under which the explanation is acceptable to the subject, should be investigated here.

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Conflict of Interest

None.

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Модельовання пояснення

в просторі множинних репрезентацій плину часу

Олексій Полунін

Доктор психологічних наук, професор

Національний університет біоресурсів і природокористування України

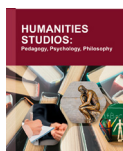
03041, вул. Героїв Оборони, 15, м. Київ, Україна

<https://orcid.org/0000-0001-9058-3200>

Анотація. Пояснення становить невід'ємну складову як філософського, наукового, так і повсякденного мислення. Тому модельовання пояснення та розуміння джерел його варіативності набуває значної ваги в філософії, в поведінкових та природничих науках, а також у наративізації суспільних подій через мас-медіа. Для розкриття одного з джерел варіативності пояснень у статті досліджено модельовання пояснення в просторі множинних когнітивних репрезентацій плину часу. В якості методу використано формальне модельовання на підставі наявних теорій пояснення, експлікація ролі когнітивної репрезентації експлананта та експланандума в часовому вимірі. Останнє виконувалось у комбінації з аналізом експериментальних студій щодо впливу когнітивної репрезентації плину часу на оцінку об'єкта з подальшою інтеграцією теоретичних моделей й експериментальних результатів. З огляду теорій пояснення зроблено висновок, що вони, попри все розмаїття, експліцитно або імпліцитно покладаються на розгортання подій в часі, й плин часу в них відіграє істотну роль. Виходячи зі здатності когнітивної системи до продукування множинних репрезентацій плину часу та того, що зміна репрезентації плину часу визначає варіативність у відображенні навколишнього світу, а отже, й експлананта та експланандума, обґрунтовано доречність переходу від конвенційного

сингулярного потоку часу в теоріях пояснення до подання його множиною окремих, самостійних когнітивних репрезентацій зі специфічними властивостями. Для різних теорій пояснення розкрито значення переходу від конвенційної моделі сингулярного плину часу до концепіювання плину часу через множину когнітивних репрезентацій. Запропоноване введення множинних репрезентацій плину часу відкриває новий горизонт для подальших теоретичних досліджень. У практичному сенсі воно наближає використовувані моделі до реального мислення й поведінки особи, а тому підвищуватиме їх надійність та прогностичну цінність

Ключові слова: теорія пояснення; когнітивна репрезентація часу; множинність репрезентацій часу; варіативність мислення; когнітивні системи



The human as consumer of biotechnology: Risks and prospects of the technological boom

Ruslan Grechkosii*

Doctoral Student

Dragomanov Ukrainian State University

01601, 9 Pyrohova Str., Kyiv, Ukraine

<https://orcid.org/0009-0000-9022-7046>

Abstract. The relevance of this article was driven by the need to identify the risks faced by humans as consumers of biotechnology. Enthralled by its possibilities, consumers often overlook how the resulting changes may impact their lives. The study aimed to explore the ambiguities associated with using biotechnology in contemporary society. To achieve this, phenomenological, interpretative, and analytical methods were employed. The findings confirmed that modern advancements offer boundless opportunities – in medicine (such as artificial organ creation and life extension), energy (including biofuel production and environmental remediation), and genetic modification (of both humans and animals). However, these advancements also pose immense challenges, demanding a high level of responsibility from both scientists, who are increasingly conducting various experiments, and individuals, who must navigate the choices presented to them. The very concept of humanity is under threat as biotechnology reshapes and transforms not only this perception but also the understanding of one's place in the world. The absence of ethical principles and criteria for assessing the work of scientists implementing biotechnology raises further concerns. This article, therefore, focused on the position of modern individuals as consumers of biotechnology who find themselves at a crossroads. Despite the benefits offered by biotechnology, it also entails a range of risks and uncertainties regarding the future of human existence. The practical significance of this study lies in encouraging consumers to make informed choices and use biotechnology responsibly while also fostering an open dialogue among scientists. The research itself remains open to discussion, aiming to unite the efforts of scientists, public figures, and consumers

Keywords: anthropological perspective; genetic modification; body; responsibility; ethical aspects; transhumanism; identity

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*Corresponding author



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Introduction

Biotechnology refers to the area of science that involves the use of living organisms, their components, or their biological products to create new products or processes. This broad concept encompasses numerous scientific fields, ranging from medicine to industry. Biotechnology acts as a powerful tool, enabling the modification of living organisms at a molecular level. These technologies open up vast opportunities for humanity, from developing new medicines to treat serious illnesses to creating sustainable crops. However, alongside these possibilities arise numerous challenges and a host of philosophical questions, prompting reflection on the very nature of life, the role of humans in the world, and the ethical boundaries of scientific progress (Sinclair & Whistler, 2024).

The question of biotechnology and its impact on humans is being addressed by numerous Ukrainian and international researchers. For instance, I. Klyuchka & M. Kitov (2020) in their study provide evidence of the existing threat: "Biotechnological experiments frequently disrupt social peace and stability, posing a real threat to human existence, leading to concerns about biological security. Therefore, it is crucial to analyse this issue from a philosophical perspective to mitigate the consequences of the rapid development and implementation of modern technologies without proper investigation and consideration of potential negative trends and threats to human life and humanity as a whole". Polish researcher W. Stomski (2018) repeatedly emphasises the lack of clear ethical regulations in the use of biotechnologies. Despite the rapid advancement of technologies capable of altering living organisms and their widespread use, there is still no robust regulatory framework for such consumption, which could lead to extremely catastrophic consequences.

As T. Teslenko & B. Kandel (2024) note in their article, the current stage of societal development is characterised by the rapid proliferation of Fourth Industrial Revolution technologies, which are blurring the lines between the physical,

digital, and biological realms. This phenomenon, building upon the achievements of previous technological eras, is distinguished by the integration of diverse technologies, such as nanotechnology, biotechnology, artificial intelligence, and others, leading to qualitative changes in all spheres of human activity. It is particularly important to recognise that these technologies not only impact the economy and industry but also have a direct influence on biological systems, including humans, necessitating a thorough analysis of their ethical and social implications. O. Ptashchenko & D. Arkhypova (2020) also point out that the successes of the scientific and technological revolution in production and everyday human life offer great potential for solving pressing economic and social problems but at the same time create serious contradictions that sometimes threaten sustainable development.

P. Diamandis & S. Kotler (2020), in their book, analyse how the convergence of various cutting-edge technologies (artificial intelligence, robotics, biotechnology, 3D printing, virtual reality, etc.) is accelerating changes in the economy, society, and everyday life. The authors argue that technological progress is happening exponentially, which will lead to radical transformations in the coming decades. They stress that businesses, governments, and individuals must be prepared for rapid changes and embrace these opportunities rather than fear the future. In turn, J. Rožker (2020) writes that various ethical models, including Eastern philosophical approaches (such as Confucianism), can offer new strategies for addressing crisis situations, including pandemics, and that these approaches should be considered in the context of the global challenges posed by biotechnologies. M. Mustafai (2022) points out that ethics, as a branch of philosophy, examines moral values and principles that determine what is good or evil and that in the context of modern technological progress, particularly in biotechnology, there is a need to develop new ethical approaches to assess actions and their consequences.

es. Thus, ethical considerations are an integral part of the development of biotechnologies, and moral aspects must be taken into account in their application. T. Bukina & N. Marynets (2024) note that contemporary philosophy seeks to re-evaluate traditional concepts of humanity, such as rationality, free will, and morality, through an interdisciplinary approach. This involves integrating philosophical reflection with scientific research in fields such as psychology, neuroscience, and sociology, as well as considering diverse philosophical perspectives, from humanistic to post-humanistic, existential, and feminist.

Therefore, as the analysis of literature demonstrates, biotechnologies offer unprecedented opportunities to improve lives but simultaneously create serious ethical and social challenges that require deep reflection. Consequently, this article aimed to identify the ambiguities surrounding the use of biotechnologies by modern humans in any sphere (medicine, industry, etc.).

Materials and Methods

To achieve the aims and objectives of this study, phenomenological, analytical, and interpretative methods (including literature and source analysis, structuring, and others) were employed. Specifically, the phenomenological method was used primarily to track how biotechnology is perceived by individuals and how they conceptualise their coexistence with it. Additionally, this method facilitated the identification of the meanings ascribed to emerging technologies, which is particularly significant in understanding the consumerist context.

The analysis method facilitated the identification of biotechnology's impact on social structures, power dynamics, and justice. Concurrently, it helped uncover a range of fundamental questions about the nature of life, humanity, and reality that arise in connection with the development of biotechnologies. Another aspect of this method, namely logical analysis, was used to clarify specific concepts (for example, the concept of transhumanism) and arguments

related to biotechnology. As for the hermeneutic approach, namely the method of interpretation, its versatility aided in the interpretation of texts and discourses related to biotechnology, helping to understand how perceptions of them are formed in society. For example, the method of interpretation highlights a range of moral dilemmas that arise in connection with the chaotic application of biotechnologies, such as issues of cloning, genetic modification, and bioethics.

For the purposes of information provision, the philosophical foundation of this research was grounded in the ideas of M. Heidegger, J. Baudrillard, and others. Specifically, to articulate the unique character of the human consumer, the author turned to the classics of philosophical thought, namely J. Baudrillard (1970) and A. Badiou (1993). The former makes it clear that the world of consumption itself is built on principles that entice individuals to desire anything that might seem "necessary", without considering the consequences until they manifest. The latter argues that the human body, which individuals constantly seek to modify by transcending the "soul-body" or "spiritual-physical" dichotomy, loses its human characteristics and becomes something else, requiring a different definition and new rules for its functioning.

Results and Discussion

Biotechnological progress as a path to transhumanism and the "posthuman"

While the technical aspects of biotechnology are primarily the domain of applied specialists such as medical professionals, engineers, and environmental scientists, the field also necessitates philosophical analysis. Understanding the implications of biotechnology significantly clarifies the comprehension of human life, the principles governing societal function, and changes in the natural world. Biotechnology is not merely a tool for scientific advancement; it is a phenomenon that touches upon fundamental questions of existence, morality, freedom, and responsibility. In popular scientific studies, one increasingly

encounters assertions that the biotechnology boom is a powerful means of enhancing human capabilities. These assertions primarily correlate with the anthropocentric paradigm, which posits that throughout human history, humanity has continually strived to improve life, overcome natural limitations, and reach new developmental horizons. However, as is often the case, there is a flip side to every coin. Whether the biotechnology boom will ultimately represent progress or a significant leap towards regression remains to be seen. For now, researchers can only put forward hypotheses.

Among the advantages, the undeniable contribution of biotechnologies to the medical field of scientific knowledge takes precedence (Kotvitska *et al.*, 2022). Various technological advancements promote possibilities that ensure the achievement of a near “ideal” level of human organism perfection. Technologies that slow down ageing, enable tissue regeneration or restore them at the cellular level entice specialists with the prospect of life extension. Alongside genetic engineering and neurotechnologies, which promise humans almost “superhero” abilities (for example, enhanced cognitive abilities, improved endurance, emotional resilience, etc.), an image of an enhanced human is emerging. It is precisely for this reason that many new theories related to the idea of transhumanism arise. Proponents of this idea believe that humans are capable of transcending their biological nature and that biotechnology tools can facilitate this. Transhumanists see in biotechnologies the possibility of creating a “posthuman”, a being free from diseases, ageing, or even death. In philosophical theories by N. Bostrom (2014) and R. Kurzweil (2024), the idea of transhumanism emerges as an opportunity for radical changes and improvements in human life. As one of the founders of the Future of Humanity Institute (Oxford), N. Bostrom is at the forefront of the idea that technology enhances not only the physical state of humans but also their moral capabilities, bordering on transcending human limitations and conventional notions of “humanity”. On one hand, this theory is based on the concept

of advanced artificial intelligence that could surpass human cognitive abilities and thus not be limited by any algorithms. On the other hand, N. Bostrom is guided by a somewhat naive belief in “moral progress”, which, alongside technological advancement, can improve human living standards. This is an illusion, as such “moral progress” would require humans to already be “posthuman”. The evolutionary path to this could prove to be an unproductive “road to nowhere”. Of course, N. Bostrom (2014) outlines various scenarios for achieving this prospect. There are three classes of scenarios, represented by slow, rapid, and moderate take-offs, but even these seem fantastical.

R. Kurzweil’s (2024) model appears more realistic. The concept of “technological singularity”, which is based on the idea of technologies reaching a level where human intelligence can no longer control their development, is thought-provoking. R. Kurzweil emphasises the exponential growth of technology. Unlike linear development, exponentiality suggests that each new generation of technology provides a foundation for the faster development of its successor. An example of this is Moore’s Law, which states that the computing power of computers doubles approximately every two years. Therefore, considering this, R. Kurzweil concludes that technologies such as genetics, nanotechnology, and robotics are capable of causing radical changes in society. Under such conditions, technological singularity – the point at which artificial intelligence can improve faster than human intelligence – no longer seems like such a fantastical phenomenon.

In R. Kurzweil’s (2024) calculations, superintelligence will cross the singularity threshold around the year 2045. It is during this period that significant changes in the development of civilisation will occur. Currently, humans are gradually moving towards a fusion of humans and machines, and they are doing so naturally through the pursuit of “longevity escape velocity”. The application of technologies that allow tissue regeneration, thereby slowing down ageing, the replacement of organs with artificial ones, cos-

metology, and many other things that increasingly attract the modern consumer, are bringing humanity closer to the human-posthuman boundary. However, it is important to note that these are merely assumptions. As M. Beilin & O. Zheltoborodov (2023) point out, the creation of “living” artificial intelligence, as a natural one that has undergone certain changes due to genetic engineering intervention, is predicted to take place in this context. At the same time, artificial intelligence is understood as “non-living”, technical intelligence.

Ideological aspects of biotechnology consumption in a consumer society

Despite addressing seemingly significant issues for humanity, a range of what J. Baudrillard (1970) would call “obscene” and almost imperceptible, yet highly significant, concerns emerge. The fact is, that humans exist in an era of consumerism, which has its corresponding ideology subtly present in all processes and often overlooked. Within a consumer society, biotechnology adds ideological constants of control and immortality. For the average consumer, biotechnology is often associated with control and immortality. Technologies aimed at extending life (anti-ageing) create the illusion of control over time and nature. Individuals begin to believe that all technical “investments in themselves” will allow them to be “their own gods”. However, following J. Baudrillard’s logic regarding consumerism and the consumer, is in the pursuit of illusory immortality, individuals destroy themselves: they deprive life of any meaning, as it is the finiteness of human existence that makes life unique and valuable. As the French intellectual argues, such a desire for immortality can lead to new forms of exploitation and inequality, as access to such technologies cannot always be provided to everyone without exception. Consequently, new privileged strata of society may emerge, as often depicted in science fiction films.

It is not just the ideological component of consumer society that can cause a range of problems in connection with the use of biotechnologies. In a consumer society, reality is constantly

replaced by simulation, where signs and symbols dominate over real objects. This is why bioethical issues, which are the subject of widespread discussions (for example, manipulation with genetic engineering or cloning), can themselves become part of a symbolic order that conceals the true mechanisms of power and control (Nabavizadeh *et al.*, 2016; Almeida & Ranisch, 2022). For example, advertising narratives about the salvation of humanity, improving the quality of life, or extending it to justify the implementation of these technologies often ignore the potential risks and consequences that should be considered. Another variant of this state of affairs can be any refusal of direct, open discussion. Often, those involved in the implementation of a particular technology refuse open discussion, although this is an extremely negative phenomenon, as it complicates the further situation of a person who does not fully understand the possible consequences of their impact (Stomski, 2007).

A. Badiou (1993) views the body not merely as a biological object but as a site for the realisation of truth and subjectivity. He critiques contemporary concepts that attempt to blur the lines between the physical and the spiritual, subjecting the body to endless modifications in pursuit of a new identity. A. Badiou emphasises that human subjectivity is formed not through external transformations but through fidelity to truth, which is revealed in events. If the body loses its traditional characteristics and transforms into “something else”, this may necessitate a change not only in definitions but also in the very rules of its existence. This poses new questions for philosophy about what it means to be human if physical embodiment is no longer a stable category.

Risks and ethical dilemmas of biotechnology application in the modern world

There is a significant range of other problems that lie beyond the “incentive” programs for the use of biotechnologies. Biotechnologies, despite their significant potential in solving global problems such as food shortages, diseases, and environmental

crises, can seriously negatively impact society, nature, and human health (Aziz *et al.*, 2022). According to I. Klyuchka & M. Kitov (2020), "...it is impossible to exclude the possibility that the widespread dissemination of biotechnology beyond scientific laboratories may result in new, unpredictable environmental problems for humanity. This concerns, in particular, the creation and release of new types of microorganisms into the environment that have no analogues in nature, the long-term effects of mass consumption of transgenic products, the side effects of mass vaccination, and the widespread use of new drugs. Of particular concern is the possibility of using biotechnological achievements for terrorist purposes."

Among the main risks posed by the application of biotechnologies is the possibility of creating genetically modified organisms (GMOs) that can disrupt natural ecosystems, displacing existing species or crossbreeding with them, which can lead to irreversible changes in the planet's biodiversity (Macfarlane *et al.*, 2022). Furthermore, the use of GMOs in the food industry raises concerns about the long-term effects on human health, as the impact of modified products on the body is not fully understood and may provoke quite complex diseases (Lerner *et al.*, 2024).

Another alarming aspect is the development of gene-editing technologies used in medicine, such as the CRISPR-Cas9 method, which, while having immense potential for treating hereditary diseases, also carries ethical concerns and risks in creating "designer babies" with predetermined characteristics, which again can exacerbate social inequality and lead to new forms of discrimination (Yulevych *et al.*, 2022). The CRISPR-Cas9 method is considered a revolutionary gene-editing technology that allows for highly precise editing of the genomes of living organisms, including humans, by using a system that was initially discovered in bacteria as a defence mechanism against viruses. According to O. Yulevych *et al.* (2022), CRISPR is a sequence of repeating DNA segments capable of "remembering" fragments of foreign genetic information, and Cas9 is a protein that acts as

"molecular scissors", cutting DNA at a specific location, allowing for the deletion, addition, or alteration of specific genes. While CRISPR-Cas9 has made it possible to treat a range of serious diseases, its application in "modelling" and "designing" future humans raises serious questions, and not just ethical ones. As O. Yulevych *et al.* (2022) note, "the use of the CRISPR-Cas9 technology in gene therapy allows for precise changes to the DNA of cells. If combined with vector-based delivery systems, it would enable systemic influence on the body and modification of the genomes of large numbers of cells."

The list of problems arising from the use of biotechnologies could be extended. However, it is crucial to understand that their application touches upon quite diverse aspects of human existence. Without proper control and regulation, biotechnologies, instead of solving problems, can become a source of new challenges for humanity, affecting ecology, economy, ethics, and security. Therefore, in the author's opinion, the key advice for the modern consumer should be a reminder of their own finitude. As M. Heidegger (1927) argued in the 20th century, reflecting on human finitude, he considered it an inherent boundary of existence. In his seminal work *Being and Time*, he introduced the concept of "Being-towards-Death" (*Sein zum Tode*) to emphasise that death is not merely a biological end to life but a fundamental characteristic of human beings, which defines its meaning and structure. And, arguably, its value-laden content. For M. Heidegger, humans, in general, differ from other forms of being in their ability to recognise their own finitude. This awareness is not something abstract or distant; on the contrary, it permeates all existence, setting the unique tone of everyday life. Finitude is revealed through temporality: humans live in time, and their lives are limited. It is in this awareness of their temporal nature that humans find the possibility of the fullness and authenticity of their existence. This authenticity is made possible when individuals accept their death as inevitable and cease to flee from it into everyday worries,

social roles, or illusions of immortality (to which "biotechnological immortality" can be added). Accepting finitude allows individuals to live more fully, focusing on what truly matters and rejecting socially imposed patterns. Without such acceptance, individuals find themselves immersed in a kind of anonymous existence, *das Man*, where decisions and values are determined by external forces rather than personal choice.

Thus, being attuned to the acceptance of finitude, individuals shed illusory illusions and do not dissipate their lives. Finitude, as a boundary and a condition for the possibility of true freedom, activates a switch for responsible existence in humans. Death becomes a horizon that delineates the space of human responsibility and opens the way to true self-understanding. Through the awareness of their finitude, individuals can transcend the confines of everyday life and begin to live as if each moment were their last, which allows for a deep connection with their own being, rather than exchanging it for fleeting trends and tendencies, no matter how alluring they may be.

Conclusions

In the opinion of the study's author, individuals consuming biotechnologies should pay attention to several key aspects. Of course, bearing in mind this being embedded in a consumerist system makes it difficult to crystallise values based on common sense and critical thinking. Firstly, it is crucial to understand the safety and quality of products (regardless of whether they are food products, beauty procedures, or the use of implants): it is necessary to ensure that products or technologies have undergone the necessary clinical trials, certification and compliance with the standards of regulatory bodies. Secondly, the scientific validity of claimed effects should be assessed, and thus, attempts should be made to avoid pseudoscientific claims and focus on reliable research. Thirdly, individual bodily characteristics must be taken into account, as the

effectiveness and tolerability of biotechnologies can depend on genetics, health status, and lifestyle. It is also worth monitoring the environmental consequences of using biotechnologies, especially when it comes to genetic engineering, etc. Finally, awareness of the legal and ethical aspects of applying such technologies is important to minimise potential social or moral conflicts. This is far from an exhaustive list of what individuals can do to safeguard themselves from the negative consequences that biotechnologies may cause.

In conclusion, it can be asserted that biotechnologies hold immense potential for improving the quality of life, but their uncontrolled and uncritical use can lead to serious consequences. Therefore, in the context of a technological boom, it is critically important to develop a consumer culture that is based on scientific validity, ethical principles, and environmental responsibility. Only a conscious and responsible attitude towards biotechnologies will allow humanity to maximise their benefits while minimising risks. The prospects for further research in this area lie in a deeper study of the ethical, social, and environmental aspects of biotechnology application. In particular, it is necessary to investigate the impact of genetically modified organisms on biodiversity, develop ethical norms and legal frameworks for the use of genetic engineering in medicine, and study the psychological aspects of biotechnology consumption in a consumer society. Additionally, it is important to explore the impact of biotechnologies on the development of artificial intelligence and their role in the formation of the "posthuman".

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Людина як споживач біотехнологій: ризиків перспектив технологічного буму

Руслан Гречкосій

Докторант

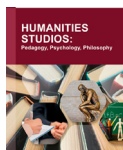
Український державний університет імені М. Драгоманова

01601, вул. Пирогова, 9, м. Київ, Україна

<https://orcid.org/0009-0000-9022-7046>

Анотація. Актуальність статті умотивована необхідністю виявлення ризиків, які постають перед людиною – споживачем біотехнологій. Будучи зачарованим їхніми можливостями, споживач залишає поза увагою те, яким чином всі ті зміни, які вони дають, вплинуть на його життя. Мета роботи полягала у виявленні неоднозначностей при використанні сучасною людиною біотехнологій. Для її реалізації застосовувались методи: феноменологічний, метод інтерпретації, аналізу та ін. Результати роботи підтвердили, що сьогоднішня відкриває перед людиною безмежні можливості: в медицині (створення штучних органів, продовження життя тощо), в енергетиці (виробництво біопалива, очищення довкілля та ін.) чи генетичній модифікації (як людини, так і тварини), але й не менш безмежні виклики, адже вимагає максимальної відповідальності як від науковців, які все частіше проводять різні експерименти, так і від людини, яка робить той чи інший вибір. Під загрозою опиняється саме уявлення про людину, оскільки під дією біотехнологій воно змінюється та трансформується, як і її уявлення про власне місце у світі. Відсутність етичних принципів та критеріїв оцінки діяльності науковців, що впроваджують біотехнології, теж викликає деяку стурбованість. Тому в даній статті увагу було спрямовано на те, що сучасна людина, будучи споживачем біотехнологій, опиняється на роздоріжжі, оскільки за всіма благами, які несуть біотехнології, висновується низка ризиків та острахів за перспективи буття людини. Практична цінність дослідження полягає в тому, щоб зробити певний заклик споживачу на обдуманий вибір і відповідальне використання біотехнологій, а науковців вивести на відкритий діалог. Адже саме дослідження є відкрите до діалогу задля об'єднання спільних зусиль науковців, громадських діячів чи споживачів

Ключові слова: антропологічна перспектива; генна модифікація; тіло; відповідальність; етичні аспекти; трансгуманізм; ідентичність



Cultural policy as a factor in the development of national identity of Ukrainians in the contemporary world

Valentyna Kulenko*

PhD in Philosophy, Associate Professor
National University of Life and Environmental Science of Ukraine
03041, 15 Heroiv Oborony Str., Kyiv, Ukraine
<https://orcid.org/0000-0002-4313-8494>

Inna Savytska

PhD in Philosophy, Associate Professor
National University of Life and Environmental Science of Ukraine
03041, 15 Heroiv Oborony Str., Kyiv, Ukraine
<https://orcid.org/0000-0002-3795-0427>

Abstract. The relevance of the subject matter is conditioned by the problem of the crisis of national Ukrainian identity against the background of Russian military aggression, which is a strategic threat to the country, which has been fighting for its independence and territorial integrity for years. The purpose of the study was to investigate the possibilities and means of influencing cultural policy on the process of developing the national identity of Ukrainians. To achieve this goal, the following procedures were applied: analytical and synthetic research, phenomenological, dialectical, cultural, descriptive, and causal methods that reveal the content of cultural policy and identify influences on the processes of national identification. The basis of the research was the thesis that culture, being a phenomenon of the living world, is simultaneously an instrument of politics, a means of communication, and a tool for manipulating consciousness. In the course of the research, it was found that non-violent and non-aggressive means of cultural policy are more effective for the processes of self-identification and development of national identity, intercultural communication, compared to conventional mechanisms of influence, which are often ineffective in modern conditions of post-non-classical society with its uncertainty, transnational ties, hybrid wars, etc. Aesthetic and emotional perception, typical of culture and art, appeals to the ideas of cultural unity, the heredity of cultural traditions, common markers of memory as a basis for understanding complex issues of socio-political existence. It precedes a rationally substantiated awareness of reality, providing at the aesthetic level the development of pre-conceptual impressions through emotions, irrational manifestations.

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*Corresponding author



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Detached values of the aesthetic acquire the ability to influence reality, containing a perfect image of proper existence, reflect the socio-cultural matrix of the present, and provide stable mechanisms for identifying the individual and social development, objectified in political programmes, ethical principles, worldview ideas, creative acts, etc. The results of the study can be used by state and local authorities, public organisations for strategic planning and correction of cultural policy, cultural diplomacy, etc.

Keywords: culture; socio-cultural transformations; identity threats; cross-cultural communication; cultural diplomacy

Introduction

A characteristic trend of the modern world is a re-thinking of the meaning of political action. Analysis of the effectiveness of political actions has revealed that the non-violent means of soft cultural influence inherent in cultural policy are among the most effective. In philosophical reflections on the phenomenon of cultural politics, its understanding is reduced to two theses. First, cultural policy is a managerial activity (vertical and horizontal) in the field of culture. Secondly, it is the result of combining culture (national, regional) with politics to solve the country's domestic and foreign policy problems. This combination leads to the use of the cultural component as a determining political dominant of influence. This refers to the fact that if the state policy is implemented considering and using the cultural characteristics of the region, cultural traditions, values, arguments, then this brings better results, and they are achieved by non-aggressive means. This allows forming the most acceptable and, consequently, the most successful vector for implementing political decisions, expanding the zone of influence, etc. The history of mankind demonstrates that the rejection of politics from culture has a significant impact on both culture and politics. For culture, this turned out to be apolitical, loss of meaning, self-love, which is reflected, in particular, in the theory of "art for the sake of art". The refusal of politics to implement it in line with national (ethnic) culture is extremely harmful, because such separation from the cultural soil provokes the impotence and ineffectiveness of politics, leads to the use of power, punitive means of influence and,

ultimately, the failure of politics, up to the loss of statehood. In the current conditions of the threatened existence of the state of Ukraine against the background of Russia's military aggression, problematisation of the issue of Ukrainian cultural policy is one of strategic and security issues.

It should be noted that the discourse on national identity is not homogeneous. A significant part of researchers insist on its defining role in shaping collective interests and political behaviour. However, there are also those who consider the concept of national identity to be more theoretical, amorphous, and unstable constructs, which makes it of little use for solving practical problems. In this regard, Y. Kaplan *et al.* (2022) conducted an empirical study of national identities to compare and classify them. They appealed to metanarratives and meta-views as a theoretical basis for self-identification. The researchers define metanarratives as "shared dominant stories" and "each nation's meta-narrative". These dominants influence values, beliefs, and behavioural patterns. Researchers expect that in this way the essence of national identity is covered, similarities and differences between different national identities are revealed. These conclusions seem important and promising, and are a contribution to the theoretical development of the topic of national identity and overcoming ethno-national biases and inequality on ethno-cultural grounds.

N. Cherepovska (2022) explores the role of patriotism as a resource for preserving the national identity of Ukrainians in a hybrid, especially information war. According to the researcher,

this role is focused on the problem of insufficient theoretical understanding of the phenomenon of “information patriotism” – active, conscious activity in the information space aimed at protecting and distributing Ukrainian content, countering enemy propaganda and promoting Ukrainian values. Studies of this order are of value from the practical standpoint of correlation of state policy in the field of identification of citizens. In general, a deep connection between the study of national identity and the topic of community resistance to an external enemy, and overcoming prejudice, a sense of external threats, inferiority, etc., can be noted. This refers to the sphere of direct interests of politics, including cultural policy.

When defining the concept of “Ukrainian cultural policy”, experts focus on its essential features (Zdioruk, 2020). In particular, cultural policy is understood as a system of reproduction, standards, norms, subjects of development; as an opportunity to establish the commonality of cultural life in the country through the expansion of the network of cultural institutions and coordination of their activities; as the production and implementation of a unified policy in the field of education and science; as accounting, protection, and study of cultural heritage, support for traditions; the establishment of national unity through the development of the uniqueness and identity of national culture; the development of mass media that support public policy (Melnyk, 2022). The ability of cultural policy to shape, create, and construct a new Ukrainian identity is a measure of its quality. The specification of this thesis was carried out by T. Urys *et al.* (2021) by analysing the impact of a literary work on the nation's creative potential. “The modus of national identity is formulated as a way of realising the identity of one with his nation through certain aesthetic elements and structures at all levels of literary work as an artistic system.” This refers to the fact that a number of dominant elements of artistic creativity (motifs, artistic images, lyrical characters) also carry a load of archetypes of consciousness, symbols and toponyms, through which unity is established

between the author and readers. This position is important for this study, because it demonstrates the ability of culture and art to influence the consciousness of recipients by soft, often invisible means. The vector of such influence is arbitrary and is often determined by political objectives.

The main concepts of this study were cultural policy and national identity in the modern Ukrainian context. Therefore, it seemed appropriate to investigate the process of differentiation of these concepts in their interrelation and development in the works of modern researchers. The purpose of this study was to identify the influence of cultural policy on the mechanisms of self-identification and the development of national identity in the context of Russian military aggression against Ukraine.

Literature Review

The constituent elements on which the phenomenon of national identity is based are traditionally defined: historical memory, culture/tradition, and language. This opinion is found in many researchers, in particular, M. Kundera, Ya. Hrytsak, O. Zabuzhko, and others. M. Kundera (2023) was one of the first to emphasise the continuity of national identity with culture and stressed the importance of preserving national culture in the face of threats: “The identity of the people, the identity of civilisation is reflected and concentrated in what the mind has created, in what is known as “culture”. If this identity is threatened with extinction, cultural life becomes correspondingly intense, until culture itself becomes a living value around which people gather.” The opinion of M. Kundera, established under the experience of the occupation of Czechoslovakia by Soviet troops in 1968, was used as a basic position of this study, when culture overcomes the framework of the aesthetic sphere and becomes an effective factor in politics, social consolidation, international relations, etc.

The Encyclopaedia of Modern Ukraine (n.d.) the phenomenon of national identity is defined from the standpoint of cultural community as a process of identification of personalities with a

national community based on a sustained emotional connection formed as a result of awareness and acceptance traditions, culture, languages, political views, group norms and community values. The encyclopaedia offers a definition of the concept of national identity through an appeal to its components, including broad interpersonal connections and historical ideas about national identity, common historical territory, language, historical memory, culture, myths, traditions, national idea, etc. A number of researchers share a similar opinion to the above. In particular, R. Ashmore *et al.* (2001) offer an understanding of national identity through belonging to a particular state or nation. S. Dollinger (2015) considers it the meaning of “a nation as a whole, represented by the original traditions, culture and language”, which is established under the influence of education and upbringing, historical memory, and cultural proximity. Thus, the content and essence of cultural policy is revealed in the process of national identification of citizens.

The researchers note the opportunities and advantages of applying cultural policy in the field of international communication, in particular, the establishment of intercultural dialogue in the context of a meeting of different cultures. S. Zdioruk *et al.* (2012) noted on this occasion: “Culture is considered as the optimal plane for the meeting (and not the clash) of civilisations, as something that is designed not to divide, but to unite people of different races, faiths, traditions. Intercultural dialogue ... is now one of the most important tools of people's diplomacy. Culture is what shapes the country's image in the international arena, serves as a tool for promoting its foreign policy interests, and at the same time acts as a factor of national consolidation.” The above definition contains an allusion to the known opinion of S. Huntington (1997) regarding the clash of cultures.

A comparison of these two ways of interpreting the essence of cross-cultural communication is explicated in the following opinions. On the one hand, in both cases, the fact of rapid changes that are taking place in the modern world is

considered: “the inevitability of instability” – according to S. Huntington (1997); “provoking the development of new trends” – according to S. Zdioruk (2012). In both cases, cultural identity is considered as the basis for further civilisational development and integration on the grounds of cultural kinship: according to S. Huntington – in seven or eight civilisations in the world; according to S. Zdioruk – from the standpoint of Ukraine's integration into the European cultural space. This refers to the fact that a successful cultural policy can contribute to the establishment of a fruitful intercultural, inter-civilisational dialogue. However, it is clear that the opinion of S. Zdioruk regarding the meeting, not the clash of cultures contradicts S. Huntington's ideas of polycivilisation conflict. S. Huntington saw no opportunity to overcome cultural differences between different civilisations, especially in religious matters. However, it can be argued that for both researchers, the essence of cross-cultural interactions is reduced to a warning about unresolved conflicts and wars. Given the fact that dangerous cultural tensions between civilisations persist in the world, it seems important for both researchers to emphasise the importance of using intercultural dialogue in political actions, finding common ground in differences. This conclusion is generally typical for the assessment of the modern world and contrasts with the classical understanding of sovereign states, therefore, the destruction of intercultural dialogue can be considered one of the decisive criteria for the causes of wars.

Cultural policy issues are integral components of Ukraine's national security in the context of the Russian military invasion. It is in this context that O. Marukhovska-Kartunova *et al.* (2025) found out “the main socio-cultural trends that affect the transformation of national identity and sustainability in Ukraine”. Trends that determine the process of national identity of Ukrainians during the war, are considered the processes of decolonisation of the Ukrainian socio-cultural space, the exit from the Russian cultural influence in the field of music, literature, cinema towards

actualisation of national and European cultural symbols, the Ukrainian language. As the researchers point out, “these changes contribute to the development of a stronger national identity, strengthen the social aspect of this identity, and catalyse the transition from feelings of inferiority to the growth of national pride and patriotism”. This position of the researchers is consistent with the basic position of this study regarding the mutual influence of culture, politics, and identity.

Similar conclusions were demonstrated in two experimental studies by O. Spiegler *et al.* (2022) and N. Bogado *et al.* (2023), in which the researchers note the importance of studying one's own identity. The unambiguity of the conclusions in both cases is striking. Specifically, the researchers emphasise the existence of a strong correlation between conscious identity research and overcoming ethnic/racial or cultural biases. This refers to the fact that people, primarily young people who understand their own identity, realise themselves differently, overcoming the feeling of their own provinciality, inferiority. This reduces the fear of external threats and reduces aggressiveness. While ethno-cultural relief contributes to an increased intergroup sense of threat and an increase in prejudice. An additional effective factor in positive intergroup perception is considered by O. Spiegler *et al.* (2022) as the use of cross-cultural communication frameworks.

In modern European humanitarian discourse, studies of post-colonial consequences and ways to overcome them after the collapse of the Soviet Union are quite common. In particular, V. Pettai (2021) investigated the development of the national identity of Estonians after the restoration of Estonian independence in 1991. It is expected that the researcher considers the presence of Russian-speaking minorities, who have destabilised the situation in the country, to be one of the obstacles to the development of national identity. During the two decades of the 21st century, the situation has been stabilised, but the researcher insists on the importance of the issue of the new national project “In a world of European

integration and globalisation?” During the topic, K. Kovács (2022) focused on the analysis of national identity as a legal concept in the EU legal system. She noted that the EU treaty distinguishes between national and constitutional identity, and “the concept of national identity in EU law is constitutionalist”. Literally, this means fixing the democratic values of national and political identity at the constitutional level. However, such consolidation still does not remove the contradiction between national-political and ethno-cultural identity. The researcher sees the solution to the problem in the development of a new constitutional identity, which will provide, first of all, respect for universal constitutional principles. This position somewhat contradicts the provisions developed in this study. Consequently, the discourse on the mutual influence of national identity and cultural policy continues, revealing new problems, research positions, and practices for solving them.

Materials and Methods

To achieve this research goal, a set of scientific methods was used. The analytical method was used to investigate the theoretical foundations of cultural policy, in particular, to identify its essential features, functions, and tools of influence. This method was used to analyse the papers by philosophers, cultural scientists, and political scientists devoted to the problems of cultural identity, national identity, cultural policy, information warfare, and hybrid threats. Special attention was paid to research concerning the current state of Ukrainian society and the specifics of cultural policy implementation under martial law.

The synthetic method was used to generalise the obtained analytical data and develop a holistic view of the problem under study. With the help of synthesis, the relationship between cultural policy and national identity was established, key trends and patterns of influence of cultural policy on the processes of self-identification of Ukrainians were identified. The phenomenological method was used to study the essence of the phenomena of cultural policy and national identity. With

the help of phenomenological reduction, the process of influence, including manipulative, of cultural phenomena on changes in people's minds and beliefs was investigated. This method helped to better understand exactly how cultural tools can be used to form, strengthen or, conversely, destroy national identity. The dialectical method was used to clarify the dynamics of changes in the studied problems in the time context, in conditions of peace and war, stable and unstable society. The dialectical approach helped to consider the historical context of the development of Ukrainian culture and identity, and to analyse the influence of modern geopolitical factors, in particular, Russian aggression, on these processes.

The cultural method was used to analyse cultural phenomena and processes that affect the development of national identity. This method allowed studying the role of traditions, values, symbols, language, historical memory, and other cultural markers in the processes of self-identification of Ukrainians. The descriptive method was used to describe the nature of the action and establish the relationship between the phenomena of cultural policy and the processes of national identification. With the help of the description, specific examples of the influence of cultural policy on the development of national identity in the context of the Russian-Ukrainian war were recorded. The causal method was used to establish causal relationships between cultural policy and changes in national identity. This method helped to identify the key factors that determine the effectiveness of cultural policy in the field of national identity development.

The information base of the study included papers by modern philosophers, cultural scientists, political scientists, materials from mass media, social networks (Facebook, TikTok), YouTube, and other Internet sources. The use of a complex of scientific methods combined with a broad information base helped to conduct a thorough investigation of the problem of the influence of cultural policy on the development of the national identity of Ukrainians in the context of Russian

military aggression and formulate reasonable conclusions and recommendations.

Results and Discussion

Problematisation of the provincial status of Ukrainian culture and its overcoming

Based on the synthesis of the previous research material, a number of initial positions of the study are formulated: 1) culture is the engine of socio-economic development and political influence, its action is aimed at social actors as subjects of social development; 2) in the social plane, culture provides normalisation and standardisation of public life, the development of a coordinated wide network of cultural life, education and science systems, mass media, cultural heritage, etc.; 3) culture is the optimal environment for dialogue of civilisations, therefore, it is an important tool for international political action, establishing intercultural communications; 4) culture forms the image of the country, ensuring its historical subjectivity in the world and contributing to the promotion of community interests in the international arena.

This refers to the fact that cultural influences can be powerful enough to form a stable emotional connection with the community, which is implemented in the phenomenon of national identity and manifests itself in the commonality of traditions, political orientations, values, language, historical memory and myths, ways of communication, etc. Culture, being the meaning of social unity, affects the development of a common sense even at a distance, for example, among emigrants and their descendants. The power of culture is clearly manifested in the ability to influence the development of national identity among different people, despite their different ethnic, religious affiliation and origin. Thus, a descendant of the Lithuanian-Tatar family A. Krymsky, a polyglot, linguist, orientalist, poet, writer, historian, anthropologist, scientific secretary and initiator of the Ukrainian Academy of Sciences, without a drop of Ukrainian blood, called himself the greatest Ukrainian, an Ukrainophile by conscious

choice (Shtohrin, 2017). Knowing more than seventy languages, being a member of several ethnic cultures, he communicated in Ukrainian and died being accused of being an ideologist of Ukrainian nationalism. Writer, ethnographer, M. Hrymych, assessing the greatness of his figure, highlighted another area of his activity that has not yet been updated: “Now that multicultural projects in Europe have largely failed, A. Krymsky has evidence that there are models that can work” (Shtohrin, 2017). It is no coincidence that the main long-term goals of the new European cultural agenda are unity, well-being, creativity and cross-cultural communication. It is envisaged to use the power of culture for social unity and well-being, to support cultural creativity in education and innovation, and for job growth, and to strengthen international cultural ties (Meteliova, 2017).

The spiritual connection with the Ukrainian community can be traced on the example of the ethnic German Yu. Shevelov, a Slavic scientist, linguist, literary critic, teacher, founded the Association of Ukrainian writers in the diaspora “Slovo”, was the president of the Ukrainian Free Academy of Sciences, etc. Being convinced of the culture's ability to change the world, Yu. Shevelov was one of those who, in his own words, “wants to put an end to the death of the Ukrainian antiquated hamlet, transported by the order of fleeing from its time and compensating time with space to the centre of Central Europe” (Shevelov, 1949). Professor and literary critic T. Hundorova (2024) suggests that “it is Yu. Shevelov and his Kharkiv circle actualised in the middle of the 20th century in the centre of Europe Khvylovyi's (Khvylovist) version of the national revival, adapting it to the post-war era of anti-colonial movements”. Kharkiv residents in 1945-1949 organised a group – AUM (Artistic Ukrainian Movement), whose goal was to bring the country out of a state of cultural decline, “by artistic means to create a synthetic image of Ukraine, its spirituality in the past, today, and tomorrow”. And also “to serve his people in a highly artistic, perfect form and thereby gain a voice and authority in world art” (Hundorova, 2024).

AUM figures realised the fact that the stateless existence of Ukraine for centuries led to the consolidation of the provincial status of Ukrainian culture – the “Cain seal of provincialism” – according to Yu. Shevelov (1949). He devoted his life to fighting this, being convinced that such provincialism forms a pernicious barrier, the “shell of self-closure”, which separates Ukraine from the rest of the world, and therefore, is in an unfavourable, threatened situation. The goal of his actions, which remains relevant, was to change the optics and deconstruct geocultural oppositions to the level of a new provincialism, when peripheries become new centres of cultural life. This is a kind of global village concept in the Ukrainian reading, based on the belief that Ukraine could become a cultural force that would connect Europe and Asia, despite the fact that Ukraine did not yet have its own statehood. Through cultural victories, Yu. Shevelov saw an opportunity for Ukraine to achieve independence. This belief of the scientist, based on an understanding of the essence of events and phenomena, eventually became a reality. Therefore, the implementation of an effective cultural policy is also possible in conditions of threatened or stateless existence, moreover: this policy can be an effective stimulating factor in the liberation movement towards independence.

The burden of intercultural politics and national identity in the situation of the Russian-Ukrainian war

Culture has a timeless meaning that makes it important in a person's life. In the current situation, the importance of the normative factors of culture increases significantly, and the aesthetic one acquires an additional political burden. According to A. Kanarsky (2008): “If contemporary art, removing all one-sidedness in its view of what a person should be, shows their true integrity, then the only thing that can be achieved by its own (spiritual) means is only to bring the thought, will, and feeling of a person to the inner need to implement such integrity”. Modern studies of the functional load of cultural policy have received

additional connotations from the standpoint of the Russian-Ukrainian war. In particular, Yu. Melnyk (2023) notes the cultural identity factor as a condition for preserving national identity. The researcher considers cultural identity to be an opportunity for Ukraine's civilisational European development on the basis of integrative cultural strategies with the EU and the formation of the European civilisational identity of Ukrainians. Integral elements of integrative strategies are the development of joint cultural projects for the preservation of cultural heritage; actualisation of joint cultural activities with the EU; adaptation of strategies for the development of EU cultural policy to Ukrainian realities (The EU work Plan for Culture, 2022). This refers to a European strategy for developing a pan-European identity against the background of implementing a single cultural policy. The obvious advantage of such a strategy is to build unity based on common cultural values, which is a much better alternative to the fascisation of Europe under ultranationalist slogans. Cultural unity is ensured through the support of a permanent cross-cultural polylogue, a broad horizontal network of cross-cultural cooperation, respect for cultural diversity and different models of cultural policy in different EU countries, which generally contributes to the development of a sustainable sense of support and trust in the EU (The EU Work Plan for Culture, 2022). A unified cultural policy has been activated in the EU, and its basic guidelines and principles are supplemented by a number of provisions, in particular: sustainability of cultural heritage, cohesion and well-being, an ecosystem of support for artists, cultural and creative professionals and European content, gender equality, and international cultural relations are the main priorities of cultural policy. The promising priorities of the future are to expand the opportunities of the cultural and creative sectors; expand participation in cultural life and increase the role of culture in society; reveal and realise the power of culture; strengthen the cultural dimension of EU external relations. This actualisation of actions is

due, on the one hand, to the need to preserve the unity of the European Union, on the other hand, it is a consequence of awareness of global threats and challenges both within the Union and outside. Among them, the military threat from Russia is one of the most serious.

Among other things, cultural policy in military conditions becomes extremely relevant, it can be a non-obvious, but effective force, a kind of hybrid weapon aimed at undermining social unity, civilisational identity. Ultimately, by means of cultural influence, it is possible to win or destroy favour and international support, to manipulate public opinion, despite objective facts and evidence. In the context of the Russian-Ukrainian war, effective examples of such manipulative implementation of cultural policy in the international arena are observed on the part of Russia. They became possible due to the historical spread and popularity of the mythologeme "great Russian culture" in the world. This is the reason for the perception of Russia as a centre of outstanding world-class cultural life. On the other hand, the world is clearly horrified by the war crimes of Russians in Ukraine, injustice and barbaric methods of unleashed war, so the world's support, both emotional, armed, and financial-economic, is more focused on Ukraine. To prevent this, Russian cultural policy and propaganda, which carry a pronounced ideological load and manipulative practices, have been updated. Cultural manipulation is widely used to create a positive image of a criminal state, an aggressor that systematically violates the norms of international law, human rights, norms and customs of war, etc. at the same time, it claims a high cultural status.

Ukrainian researcher O. Zabuzhko (2024) is convinced that the ideological creation of cultural mythologems is a historically long-term, conscious and systematic political practice of the Russian Federation. Among other things, such a policy involves the use of social networks for mass and rapid dissemination of information, appealing to classical cultural patterns and reducing them to the plane of everyday life to develop a

positive and sympathetic image of Russia as a cultural territory. The writer points to many years of experience and a high level of skill of Russians in creating ideological manipulations. In particular, there is a video from the TikTok network, in which a conventionally attractive young Russian woman is “accidentally” met on the street and asked what she is listening to in her headphones. Girl’s answer: this is the Ninth Symphony by A. Dvorzhak’s. Under the video there are numerous comments about the natural attachment of Russians to culture, they say, “culture is in the blood of Russians”. Attention is drawn to the non-obvious nature of such manipulative influence, and therefore, its insidiousness and complexity of recognition. However, with a high degree of probability, the success of such propaganda events and the achievement of the goal set can be stated.

Analysis of the situation suggests that cultural policy tools are used in this and similar situations. In particular, the following components: 1) appeal to classical cultural samples of creativity; 2) construction of artificially deterministic ties between world-famous samples of high culture and Russians as “carriers” of this culture, 3) romanticisation of the image of the bearer of culture – exploitation of the theme of the “mysterious Russian soul” in the context of typical existential problems; 4) replication of information at the level of mass culture; 5) reduction of high culture in the plane of everyday life; 6) artificially created “random”, “ordinary” nature of the event; 7) application of aesthetic means of influence (attractive image of a young, modest, beautiful blonde, classical music, etc.). Together, this forms an associative image of culturally attractive Russia (girl = Russia) at the level of mass consciousness, which contributes to its success in the information war. To achieve such success, few resources are spent, but the impact in the world is quite significant. Thus, the manipulative use of culture for political purposes occurs, although it is difficult to recognise it by the disguised ordinariness of the created event, and cultural policy confirms its own effectiveness.

Use of cultural policy in colonising practices

The use of means of cultural influence to manipulate consciousness and identity is a common practice of colonial policy towards enslaved peoples. The cultural influence of the colonists always appeals to the idea of the superiority of the titular nation, the impossibility of achieving success for the colonised peoples without it. This fully applies to Russia’s policy, which for centuries was colonial in nature – during the Empire and the Soviet Union. The systemically implemented policy of assimilation led to the fact that people from different national and ethnic groups, in order to have better opportunities for self-realisation, abandoned their own identity and positioned themselves as “Russian”. This often caused them deep psychoemotional problems, led to an identity crisis. However, this allowed the metropolis to assert its own cultural superiority in comparison with those colonised by appropriating prominent figures, who were called their own, “Russian” – as happened with M. Hohol, P. Chaikovskyi, K. Malevych, I. Kozlovskyi, R. Viktiuk, etc. Their cultural and artistic achievements later became tools of the great Russian cultural propaganda policy (and remain so).

Among the soft means of influence inherent in such a cultural policy, manipulations with historical truth were used, including a ban on one’s own historical memory, on one’s own national culture, on one’s own geniuses and heroes for the colonised. M. Kundera (2023) called this practice a “culture of retreat”. Typical for colonising, and therefore external to enslaved peoples, culture is the denial of the right of colonised people to name or the ability to determine their heroes, outstanding events and historical figures at their own discretion and assign their names and names to topographic objects. In the end, there was a situation in the Soviet Union, which was followed by Russia as its successor, when streets and monuments to Lenin, communist leaders and Russian cultural figures were necessarily in all settlements, but the names of many prominent Ukrainian associates were forgotten, ignored,

destroyed, or desecrated and directly banned by the authorities (such as S. Bandera, S. Petliura, R. Melnyk, metropolitan A. Sheptytsky, brothers-artists M. Boichuk and T. Boichuk, and many others). Thus, the process of colonisation of consciousness took place, which provided for the development of a complex of inferiority, depreciation of the national language, culture, memory, and ultimately – the political pacification of the colonised. “Culture no longer existed as an area in which the highest values were elevated to the level of law” (Kundera, 2023). In cases of resistance of the nationally conscious part of the population, the colonialists used means of terror and physical pressure – wars, shootings, mass starvations, eviction or resettlement by whole families, colonies, organisation of artificial environmental disasters, such as changing the course of the Dni-pro River, which justified the need to flood hundreds of Ukrainian villages, break up family ties, destroy settlements, family traditions, graves of ancestors, break up geographically tied memories, the continuity of family history, inheritance of family heirlooms, etc. M. Kundera (2023) defines such a colonising Russian policy: “based on the principle: the least diversity within the greatest space”. Thus, in attempts to break the cultural tradition, historical continuity, the methods of implementing colonising cultural policy that ensured the dominance of one people over another/others, the unification of cultural, socio-economic and political space are recognisable.

Opportunities for cultural policy in the field of education and upbringing

Another powerful factor of influence in cultural policy is the development of the system of education and upbringing of children and young people. These issues have always been considered priority vectors of political activity, as they ensure the future. The success of solving the problems of education and upbringing is traditionally considered at the level of state policy in an indissoluble unity with the stable economic and ideological existence of society. However, education models

depend on the cultural and historical dominants of a particular region, on the level of development, mental and ethnic characteristics, traditions, socio-cultural values, ideological attitudes, etc. The aggravation of contradictions between education and upbringing occurred in the process of combining the interests of politics, economics and the market, when the educational process began to be mainly reduced to learning. These contradictions were differentiated as the primitivisation of education in the 20th century, due to political implications and the growth of globalisation processes. Numerous researchers have drawn attention to the fact that in the context of globalisation, the essence of the educational sphere is the implementation of training functions, primarily professional. The need for well-educated people is decreasing, but the demand for highly qualified specialists is growing. Thus, the functional load of the educational sphere has significantly narrowed and primitivised, which has led to an aggravation of the issue of ethical consequences both at the individual level and at the social level.

For a long time, starting from the classical era, the abilities of individuals were determined by the needs of the social institution to which it belonged. Cultural tradition preserved the autonomy of social institutions, and the social contract required obtaining a high level of professional specialisation. On the transcendental level, this was manifested in the neglect of the formation of a mature, critically thinking, creative personality, individuality, ignoring the highest transcendental educational tasks, in particular, the ability to criticise, counteract violence, neglect, objectification, and the like. Education and upbringing cannot be unconditionally subject to the requirements of purely economic or purely political expediency. The realities of the Russian-Ukrainian war confirm the thesis about the relevance of the educational transcendental function of the sphere of education, upbringing and culture. Ignoring this fact leads to a blurring of the identity of young people, a lack of patriotic feelings and actions, erroneous choices, etc. This is especially

dangerous in the context of the “war for the future” waged by the invaders in the Ukrainian territories, hunting Ukrainian children, abducting them from their families, taking them out of their homeland and hastily adopting them to Russian families using forged documents. The purpose of these criminal actions is to break family ties, ties with their native land, raise traitors, “Janissaries”, and in the future – cruel haters and persecutors of the lost family and culture. It is no coincidence that the International Criminal Court issued arrest warrants for Russian President V. Putin and M. Lvova-Belova, the Russian Ombudsperson for Children’s Rights, on charges of child abduction.

It is obvious that the strategies of cultural policy in the field of education and upbringing should first of all correspond to the goal – the development of a stable national identity of Ukrainian citizens. The implementation of these educational strategies should be based on humanistic and cultural values and address more noble goals than just meeting the pragmatic and economic demands of the era. Otherwise, society is doomed to the dominance of a “one-dimensional person”, as called by H. Marcuse (1964). The modern development of the global model of the world is characterised by post-industrial development trends that are interdisciplinary, nonlinear, nonequilibrium, indefinite in nature, are studied by nonlinear methodology, including, among other things, the theory of disasters, the position of polyalternativists of the future, etc. In general, this leads to a new need: the development of a person who is multidimensional, comprehensively developed, flexible in relation to social challenges and crises, able to understand and respond adequately to situations. For such multi-dimensionality, a solid base is needed – national and cultural ground that enables stable identification - cultural, national, civilisational. This will have a positive impact on the processes of integration and differentiation of cultural space, especially evident in the context of global crises, when there are insufficient mechanisms for managing both society and culture, formed by the previous era.

Humanity learns to respond to the challenges of the time in a timely and adequate manner. The difficulty lies in the fact that nonlinear, uncertain processes of the external world often require almost instant clear and concrete answers from a person: there is a request for concreteness in terms of non-obviousness. At the level of identity identification, this provokes psychological identity crises. Bifurcation and masking becomes a marker of non-integrity, fluidity of identity and variability of the inner self. The postcolonial pressure of imperial cultural models provokes conflicts of duality, split personality, apostasy and adaptation, or avoidance and self-marginalisation. O. Zabuzhko (2009) defines this phenomenon as intergenerational trauma. Ukrainian historian Ya. Hrytsak (2024) also links the process of personality splitting to cultural trauma, calling ambivalence and corruption forms of survival of the traumatised generation. He sees the task of cultural policy as raising a generation without trauma. In this context, the Ukrainian philosopher V. Kebuladze, defining protest events against the restoration of historical truth and the demolition of monuments to colonists as a failure of the cultural policy of a country that is waging a war of liberation: “It is a colonial trauma when Kyiv citizens defend the monuments to Pushkin and Bulhakov, but are indifferent to the lack of perpetuation of the memory of Valerian Pidmohylnyi, Sholom Aleikhem, Charlz Bairon, who wrote about Ivan Mazepa, etc.” (Kult: Podcast, 2021).

Analysing the difficult path of Ukrainian decolonisation, O. Zabuzhko (2024) noted: “This is, in fact, a symptom of maturity, what for people, what for peoples – to give up the business of the fact that there are irretrievable losses: that not all stories have a happy ending, and not in every fairy tale the truth wins over the wrong. Culture is created, among other things, to help a person survive with this knowledge, preserving the human being in them.” The task of the cultural policy of modern Ukraine is to restore the authentic Ukrainian ethno-cultural identity and stabilise the political national and civilisational identity based on it. This

path involves overcoming inferiority complexes, freeing colonised consciousness, and establishing an independent intercultural dialogue with the world. Decolonisation of consciousness involves the acquisition of a number of important skills of a politically mature nation, including political activity, trust in the institutions of state power, the ability and willingness to defend their constitutional rights and freedoms. These processes are taking place, and they are extremely important, because they ensure the preservation of consistent integrity of the individual, the development of the Ukrainian nation, national identity, the preservation/reproduction of historical memory as the basis of self-identity. Obviously, for the Ukrainian nation, whose history consists of a huge number of tragedies, trials, losses, defeats, this process is not easy, but it is extremely necessary.

Conclusions

The research was carried out in the context of the discourse of the relationship and mutual influence of national identity and cultural policy. Culture is immanently characterised by a high potential to be an engine of multi-vector political processes, to radically influence the socio-economic development of society, the state, and civilisation. First of all, this refers to the ability of culture as a cultural policy to consolidate and unite society and nation around common patterns (traditions, historical memory, cultural markers, etc.). The advantage of cultural policy is its implementation in the plane of horizontal social ties. This gives it a democratic character and encourages social actors as subjects of socio-cultural processes.

The ability of a cultural politician to shape, create, and construct a new Ukrainian identity is a measure of its quality. The Russian military invasion provoked the deployment of post-colonial studies in Ukraine, an important component of which was the discourse of national identity as a condition for consolidating the nation in the face of an external threat. An important component of the discourse was the study of the ability of culture to be a stimulating factor in the movement

of a colonised people to independence and the creation of their own statehood. When combining culture with politics – to ensure the rationing and standardisation of public life; to form a coordinated broad network of socio-cultural life, education and science systems, mass media, cultural heritage, etc.

Actualisation of cultural policy contributes to the development of national identity as a political unity of the nation, united by a common language, cultural traditions, historical memory, etc. Human identity is a dialectical unity of a large number of elements. Their mutual inconsistency is manifested by crises of personal development, threats both to humans and to the environment, and in the global world – to humanity. The political, cultural, and educational spheres have their own socio-cultural experience in optimising the processes of identification and development of collective identity at the level of a nation or civilisation. The means of education and upbringing can influence the development of a stable national identity, and this embodies their transcendental function. Thus, culture becomes a means of social unity at the level of national, civilisational identity. It is important that the task of actualising the role of culture as a system of values, a resource for ensuring sustainable development and consolidation of society is a programme document of Ukrainian cultural policy, reflected in the state legislation – the Law of Ukraine “On culture”.

Obviously, the Russian-Ukrainian war has aggravated and further problematised all the processes taking place in Ukraine. Against the background of active military operations, issues of cultural policy may seem secondary, but the preservation of active attention to them, their resolution indicates the level of maturity of the nation, which is aware of its own political and civilisational choice and responsibility for it. Ultimately, the potential of cultural policy optimises the processes of establishing ways of intercultural, cross-cultural communication, supporting civilisational dialogue, searching for opportunities for understanding in the face of

rapid changes, instability of systems, and multi-vector challenges. Culture, forming the image of a country, ensures its historical subjectivity in the world and contributes to the promotion of interests in the international arena, therefore, it is an important tool for international political actions and intercultural communications. Further research may be aimed at developing practical recommendations for improving cultural policy, studying the impact of information warfare and intercultural dialogue on national

identity, and analysing the role of art, education, and digital technologies in this process.

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Культурна політика як чинник формування національної ідентичності українців в умовах сьогодення

Валентина Культенко

Кандидат філософських наук, доцент
Національний університет біоресурсів і природокористування України
03041, вул. Героїв Оборони, 15, м. Київ, Україна
<https://orcid.org/0000-0002-4313-8494>

Інна Савицька

Кандидат філософських наук, доцент
Національний університет біоресурсів і природокористування України
03041, вул. Героїв Оборони, 15, м. Київ, Україна
<https://orcid.org/0000-0002-3795-0427>

Анотація. Актуальність теми зумовлена проблемою кризи національної української ідентичності на тлі російської воєнної агресії, що є стратегічною загрозою для країни, яка роками виборює свою незалежність та самостійність. Метою роботи було дослідження можливостей та засобів впливу культурної політики на процес формування національної ідентичності українців. Для досягнення поставленої мети застосовано процедури аналітичного, синтетичного дослідження, а також феноменологічний, діалектичний, культурологічний, дескриптивний та каузальний методи, за допомогою яких розкрито зміст культурної політики та виявлено впливи на процеси національної ідентифікації. Базову основу дослідження становила теза, що культура, будучи феноменом життєвого світу, водночас є інструментом політики, засобом комунікації, а також знаряддям маніпуляції свідомістю. У процесі дослідження встановлено, що несилові й нерепресивні засоби культурної політики є більш ефективними для процесів самоідентифікації та формування національної ідентичності, міжкультурної комунікації, порівняно з традиційними механізмами впливу, що часто є недієвими в сучасних умовах постнекласичного суспільства з його невизначеністю, транснаціональними зв'язками, гібридними війнами тощо. Естетично-емоційне сприйняття, типове для культури й мистецтва, апелює до ідей культурної єдності, спадковості культурних традицій, спільних маркерів пам'яті як основи для порозуміння у складних питаннях соціально-політичного буття. Воно передує раціонально обґрунтованому усвідомленню дійсності, забезпечуючи на естетичному рівні формування допнятійних вражень за посередництва емоцій, ірраціональних проявів. Відсторонені цінності естетичного набувають здатності впливати на реальність, містячи в собі досконалий образ належного буття, відображають суспільно-культурну матрицю сьогодення й забезпечують стійкі механізми ідентифікації особи та суспільний розвиток, об'єктивовані у політичних програмах, етичних принципах, світоглядних уявленнях, творчих актах тощо. Результати дослідження можуть бути використані органами державної та місцевої влади, громадськими організаціями для стратегічного планування та корекції культурної політики, культурної дипломатії тощо

Ключові слова: культура; соціокультурні трансформації; загрози ідентичності; міжкультурна комунікація; культурна дипломатія

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