

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ

НАУКОВИЙ ВІСНИК

МУКАЧІВСЬКОГО ДЕРЖАВНОГО
УНІВЕРСИТЕТУ

СЕРІЯ
«ПЕДАГОГІКА ТА ПСИХОЛОГІЯ»

Науковий журнал

ТОМ 10, № 3
2024

МУКАЧЕВО
2024

ISSN 2413-3329
E-ISSN 2520-6788

Засновник:

Мукачівський державний університет

Рік заснування: 2015

Періодичність випуску: щоквартально

*Рекомендовано до друку та поширення
через мережу «Інтернет» Вченою радою
Мукачівського державного університету
(протокол № 3 від 25 вересня 2024 р.)*

Ідентифікатор медіа: R30-04570

(Рішення Національної ради України з питань телебачення і радіомовлення
№ 1564, протокол № 15 від 9 травня 2024 р.)

Журнал включено

до Переліку наукових фахових видань України (Категорія «Б»)

з педагогічних наук (наказ Міністерства освіти і науки України № 1643 від 28 грудня 2019 р.),
психологічних наук (наказ Міністерства освіти і науки України № 409 від 17 березня 2020 р.)

Журнал представлено

в таких наукометричних базах даних, репозитаріях та пошукових системах:

Google Академія, Index Copernicus International, Фахові видання України, Національна бібліотека України імені В.І. Вернадського, CiteFactor, Directory of Open Access Journals (DOAJ), Scientific Journal Impact Factor (SJIF), UCSB Library, ERIH PLUS, Dimensions, Polska Bibliografia Naukowa (PBN), German Union Catalogue of Serials (ZDB), Leipzig University Library, University of Oslo Library, University of Hull Library, Search Oxford Libraries Online (SOLO), European University Institute (EUI), Cambridge University Library, Crossref, Naver Academic, Open Ukrainian Citation Index (OUCI), Zenty, Worldcat, Asian Science Citation Index, CORE

Науковий вісник Мукачівського державного університету. Серія «Педагогіка та психологія» / Ред. кол.:
В. Й. Бочелюк та ін. Мукачево : Вид-во МДУ, 2024. Т. 10, № 3. 110 с.

Адреса редакції:

Мукачівський державний університет
89600, вул. Ужгородська, 26, м. Мукачево, Україна
Тел. +380 (31) 312-11-09
E-mail: info@pp-msu.com.ua
<https://pp-msu.com.ua>

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

SCIENTIFIC BULLETIN

OF MUKACHEVO STATE UNIVERSITY

**SERIES “PEDAGOGY
AND PSYCHOLOGY”**

Scientific Journal

**VOL. 10, No. 3
2024**

MUKACHEVO
2024

ISSN 2413-3329
E-ISSN 2520-6788

Founder:

Mukachevo State University

Year of foundation: 2015

Frequency: quarterly

*Recommended for printing and distribution
via the Internet by the Academic Council
of Mukachevo State University
(Minutes No. 3 of September 25, 2024)*

Media identifier: R30-04570

(Decision of the National Council of Television and Radio Broadcasting of Ukraine
No. 1564, Minutes No. 15 of May 9, 2024)

**The journal is included in the List of professional scientific
publications of Ukraine (Category “B”)**

in pedagogical sciences (Order of the Ministry of Education and Science
of Ukraine No. 1643 of December 28, 2019),
psychological sciences (Order of the Ministry of Education and Science
of Ukraine No. 409 of March 17, 2020)

The journal is presented in the following scientometric databases:

Google Scholar, Index Copernicus International, Professional Publications of Ukraine, Vernadsky
National Library of Ukraine, CiteFactor, Directory of Open Access Journals (DOAJ), Scientific
Journal Impact Factor (SJIF), UCSB Library, ERIH PLUS, Dimensions, Polska Bibliografia Naukowa
(PBN), German Union Catalogue of Serials (ZDB), Leipzig University Library, University of Oslo
Library, University of Hull Library, Search Oxford Libraries Online (SOLO), European University
Institute (EUI), Cambridge University Library, Crossref, Naver Academic, Open Ukrainian Citation
Index (OUCI), Zandy, Worldcat, Asian Science Citation Index, CORE

Scientific Bulletin of Mukachevo State University. Series “Pedagogy and Psychology” / Editorial Board:
V. Bocheliuk et al. Mukachevo : MSU Publishing House, 2024. Vol. 10, No. 3. 110 p.

Editors office adress:

Mukachevo State University
89600, 26 Uzhhorodska Str., Mukachevo, Ukraine
Tel. +380 (31) 312-11-09
E-mail: info@pp-msu.com.ua
<https://pp-msu.com.ua/en>

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UDC 371

DOI: 10.52534/msu-pp3.2024.09

Oleksii Plakhotnyk*

PhD Candidate, Postgraduate Student
 Classic Private University
 69002, 70B Zhukovskiy Str., Zaporizhzhya, Ukraine
<https://orcid.org/0009-0002-1816-7434>

Serhii Burian

PhD Candidate, Postgraduate Student
 Classic Private University
 69002, 70B Zhukovskiy Str., Zaporizhzhya, Ukraine
<https://orcid.org/0009-0008-5917-6891>

The organisation of the educational process in the distance learning format in the frontline territories during the period of martial law in Ukraine

Article's History:

Received: 15.05.2024

Revised: 29.07.2024

Accepted: 25.09.2024

Suggested Citation:

Plakhotnyk, O., & Burian, S. (2024). The organisation of the educational process in the distance learning format in the frontline territories during the period of martial law in Ukraine. *Scientific Bulletin of Mukachevo State University. Series "Pedagogy and Psychology"*, 10(3), 9-16. doi: 10.52534/msu-pp3.2024.09.

Abstract. Analysing current approaches to organising remote learning in the frontline territories of Ukraine during martial law is crucial to ensure the continuity of education in times of crisis. This study aimed to identify the main challenges and prospects of remote learning, particularly by examining international experience and evaluating the effectiveness of the implemented learning models. For this purpose, a descriptive approach involving traditional document analysis, a systematic approach, and analytical and synthetic methods was employed. The primary sources of analysis were Ukrainian Laws, resolutions, Cabinet of Ministers of Ukraine's orders, Ministry of Education and Science orders and letters adopted after 24 February 2022. The study found that the key challenges for organising distance learning in frontline areas were ensuring the safety of participants in the educational process, a lack of technical facilities and resources, and psychological difficulties for students and teachers. The introduction of cutting-edge technologies and the adaptation of teaching methods could significantly increase the effectiveness of distance learning in times of crisis. Recommendations for enhancing the educational process have been formulated, including the integration of innovative technologies, advanced training for educators, and psychological support for all participants in the educational process. The study's practical value lies in the potential application of these recommendations to improve the organisation of education in the frontline areas of Ukraine, ensuring the continuity of education amidst hostilities and enhancing overall educational quality. The findings can inform the development of national strategies for distance learning during crises and contribute to improving the regulatory framework in the education sector

Keywords: remote learning; frontline education; military conflict; continuity of education; learning strategies; educational innovations

*Corresponding author

INTRODUCTION

The war has resulted in numerous problems regarding the accessibility and safety of education. Many children have lost the opportunity to participate in the educational process,

and teachers are forced to work in regions where hostilities are taking place or may take place. In such circumstances, it is essential to ensure proper learning conditions, which



requires significant planning and adaptation of educational programmes. The transition to distance learning was a key solution that enabled the educational process to resume under the challenging conditions of martial law. Distance education allows students to continue their studies regardless of their location, including those who are temporarily abroad. The current state of this issue at the global level reveals significant challenges and opportunities for ensuring continuity of education in times of crisis and conflict.

Many studies have examined various aspects of distance learning in military conflicts and emergencies. One of the key studies is the report prepared by the Ministry of Education and Science of Ukraine, which analyses the educational situation under martial law and the challenges of developing the post-war perspective (Ministry of Education and Science of Ukraine, 2023). The report titled “Education and War in Ukraine (24 February – 1 April 2022)” examines the impact of the war on Ukraine’s education system and the measures taken to support the educational process (Nazarenko *et al.*, 2022).

At the global level, the issue of distance learning in crisis situations is addressed in numerous studies. Significant studies that examine the issue of distance learning during martial law include research of S. Semerikov *et al.* (2023), which examines the challenges faced by Ukrainian students in distance learning during martial law. In their study, they analyse the results of a survey of Ukrainian students, identifying the main problems and opportunities for improving the educational process. Another study by M. Shlenova *et al.* (2023) compares the implementation of distance learning in the Ukrainian higher education system during the COVID-19 pandemic and martial law, providing insight into the evolution of approaches and teaching practices. H. Marynchenko *et al.* (2022) investigate the development and practice of distance learning in higher education institutions under martial law, focusing on the need to integrate innovative technologies and methods. In addition, N. Dichuk & O. Kravchenko (2024) focus on social and psychological assistance to children during martial law, which is an important aspect of maintaining the psycho-emotional well-being of participants in the educational process. The relevance of the study lies in the need to develop effective strategies and approaches to support the educational process in the context of hostilities. The purpose of the study was to analyse current approaches to the organisation of distance learning in Ukraine’s frontline territories and to identify the key challenges and prospects. The objectives of the study included analysing international experience, assessing the effectiveness of the implemented learning models, and developing recommendations for enhancing the educational process in times of crisis. The scientific novelty of the research lies in a comprehensive analysis of the organisation of the educational process under martial law, based on the latest research and publications. This allows not only to assess the current state of the problem but also to outline ways for further development and improvement of distance learning in crisis conditions.

MATERIALS AND METHODS

Research into the challenges of the educational process under martial law requires a specialised and unconventional approach due to numerous new factors. Traditional methods, such as questionnaires and interviews, cannot be effectively used in war zones and frontline areas due to the physical danger to respondents and correspondents. Additionally, most residents and students have left these settlements, making it difficult to obtain complete, accurate, and reliable data on their current whereabouts. This situation makes the study organisationally and economically challenging, delays the research, and reduces the relevance of the problem.

Under such conditions, researchers are forced to employ other methods and approaches. Given the prevailing circumstances, the theoretical approach to the study was found to be the most appropriate. Theoretical research methods such as generalisation, analysis, comparison, and systematisation were used to understand and address the problems of education during martial law. Generalisation helped to synthesise extensive findings from various sources to form comprehensive conclusions about the educational process during martial law. The generalisation of specific observations from legislative documents, educational directives, and scholarly articles (UNICEF, 2022; Ministry of Education and Science of Ukraine, 2023; Petrova & Shevchenko, 2023) provided a broader picture of the systemic impact of martial law on education. This allowed for the identification of common patterns and trends across regions and institutions.

The analysis included an examination of key legislative documents such as the Laws of Ukraine, resolutions (Law of Ukraine No. 2145-VIII, 2022), the decrees of the Resolution of the Cabinet of Ministers of Ukraine No. 1411 (2022), Law of Ukraine No. 463-IX (2020) and directives of the Ministry of Education and Science (2023) adopted after 24 February 2022. These documents provided critical insight into the government’s response to the education crisis. A chronological analysis of these documents allowed for the assessment of the changing educational landscape and the measures taken to address the emerging challenges. The comparison facilitated the exploration of different responses and strategies implemented by various educational institutions and regions. The comparison of approaches and results in different areas allowed for the identification of best practices and lessons learned. This comparative analysis also highlighted the differences and unique challenges faced by various communities, which helped to formulate more tailored recommendations. Systematisation involved examining Ukrainian education as a holistic system composed of various subsystems, including the Ministry of Education, local administrations, educational leaders, teachers, and students. This method helped to organise and integrate the diverse elements of the education system, providing a structured understanding of how these components interact and influence each other under martial law. The combination of these theoretical methods provided a comprehensive and nuanced understanding of

education and the response to martial law. This approach was chosen because it offers a rigorous framework for analysing complex, multifaceted issues in contexts where traditional empirical methods are impractical or impossible.

RESULTS AND DISCUSSION

In the context of martial law in Ukraine, the organisation of the educational process in frontline areas has faced numerous challenges. The war has led to significant destruction of the educational infrastructure, making it difficult to

access education (Opanasenko & Novikova, 2022). Since the beginning of the full-scale invasion, more than 3,793 educational institutions have been damaged, and 365 have been completely destroyed (Table 1) (Institute for Analytics and Advocacy, 2023). To ensure the safety of students and teachers, most schools have been equipped with shelters, and education is being conducted in a blended or remote format. This situation requires careful planning and adaptation of educational programmes to ensure accessibility and quality of education in emergency conditions.

Table 1. Destroyed and damaged educational institutions in the regions of Ukraine.

Region	Damaged	Destroyed	Region	Damaged	Destroyed
Vynnytska	4	0	Mykolaivska	246	33
Volynska	0	0	Odeska	81	0
Dnipropetrovska	283	9	Poltavska	17	0
Donetska	770	160	Rivnenska	2	0
Zhytomyrska	126	1	Sumska	130	8
Zakarpatska	0	0	Ternopil'ska	1	0
Zaporizka	212	14	Kharkivska	579	51
Ivano-Frankivska	0	0	Khersonska	296	51
Kyivska	198	13	Khmeln'ytska	5	0
Kirovohradska	9	0	Cherkaska	11	0
Luhanska	182	23	Chernivetska	0	0
Lvivska	8	0	Chernihivska	144	2

Source: developed by the Institute for Analytics and Advocacy (2023)

More than a thousand educational institutions have been so severely damaged that they cannot be restored. Approximately 20% of children are unable to attend school or even study in a hybrid format. At the beginning of the school year, out of 13,000 schools, approximately 2,500 are forced to operate exclusively in remote mode, which is almost 20% of the total (Institute for Analytics and Advocacy, 2023). Studies show that distance learning is less effective than face-to-face learning. For many students, this is the fourth year of online learning, which negatively affects the quality of their knowledge. According to the Ministry of Education and Science of Ukraine, as of February 2023, almost 1.6 million students were studying online (Ukrinform, 2023). The quality of education is also affected by frequent air raids, power outages, and poor internet connections (Petrova & Shevchenko, 2023). The lack of necessary educational skills and socialisation among schoolchildren could have long-term negative consequences for Ukraine's economy. Ukrainian society should actively fight for equal educational opportunities for children even during the war, especially in the frontline regions (Galynska & Bilous, 2022). Education is the foundation for the development of any society (Vynoslav'ska *et al.*, 2024). The war should not deprive children of the opportunity to acquire

the knowledge and skills necessary to rebuild the country in the future. Today's schoolchildren are the future leaders, professionals, and citizens who will take responsibility for the restoration and development of Ukraine. Since the beginning of the occupation of Ukrainian territories by the Russian army, the Cabinet of Ministers and the Ministry of Education and Science of Ukraine have begun to amend legislation. In particular, Cabinet of Ministers Resolution No. 1411 (2022a) cancelled the increase in salaries for pedagogical, research, and teaching staff of educational and scientific institutions. In early spring 2022, with the outbreak of hostilities, a two-week holiday was declared in Ukraine and the educational process was suspended. As of 28 March, 144 children had been killed and more than 220 injured as a result of the hostilities. 659 educational facilities were damaged by bombardment and shelling, of which 74 were completely destroyed (UNICEF, 2022).

Since 14 March 2022, education has resumed in most regions, with the format of classes being determined by regional administrations and educational institutions. By 31 March, 76 Ukrainian educational institutions had been destroyed, and 722 had suffered damage. By August 2022, the total number of educational facilities lost across all regions had reached 790. Distance education recommenced

on 14 March. The Learning Without Borders project was introduced for students in grades 5-11, offering daily video lessons on specific subjects. As of 21 March 2022, the educational process in 11 regions of Ukraine was being conducted remotely, with over 10,000 schools operating in this format. Nearly 3 million students returned to school. By the end of March, general secondary education institutions in three regions, including Kyiv, continued with remote learning; in four regions, education was partially organised; in five regions, education was either partially resumed remotely, holidays were extended, or classes were suspended, depending on the specific community. In the remaining regions, education was suspended due to security concerns. In total, 5,000 children participated in education from their temporary residences after being displaced.

The implementation of remote learning in Ukraine's frontline areas during the war is a critical issue requiring a thorough approach to maintaining educational continuity and ensuring safety. The introduction of martial law on 24 February 2022 due to the full-scale aggression by the Russian Federation has presented significant challenges for the education system. Distance learning became a vital measure to continue education despite the ongoing dangers. It allows students to pursue their education regardless of their location, even in foreign territories. According to Article 57-1 of the Law of Ukraine "On Education" (Law of Ukraine No. 2145-VIII, 2022), state guarantees of the right to education apply to all participants in the educational process. The main regulatory documents governing distance learning are the Laws of Ukraine "On Education" and "On Complete General Secondary Education". The decision to adopt distance learning is based on the free choice of parents or other legal representatives, confirmed by an application or agreement on the provision of educational services. Under martial law, distance learning may be the only viable way to ensure security (Marynchenko *et al.*, 2022).

The Ministry of Education and Science of Ukraine (MES) has taken several steps to ensure the high quality of distance learning. An important initiative was the introduction of the All-Ukrainian School Online electronic platform, which provides access to learning materials and allows for communication between students and teachers. Additionally, the Ministry of Education and Science has developed a system to automate the work of inclusive resource centres, supporting the education of children with special educational needs. Schools are also integrated into the AIKOM system, which facilitates the use of electronic diaries and journals to record student performance. This system helps to organise the educational process more efficiently and transparently. Distance learning is conducted in both synchronous and asynchronous modes using various electronic platforms. These include Google Workspace, Google Classroom, Novi Znanja, and HUMAN.UA. For communication, online services such as Zoom, Skype, Microsoft Teams, and Google Meet are widely used. These tools allow for real-time interaction between students and teachers, while also enabling students to view recorded

lessons at their convenience. Distance learning is the organisation of the educational process using modern technologies that allow participants to interact at a distance in a digital environment (Muñoz-Najar *et al.*, 2021; Polianovskiy *et al.*, 2021; Semerikov *et al.*, 2023). This definition is officially adopted in the "Regulation on the Distance Form of Complete General Secondary Education", approved by The Order of the Ministry of Education and Science on 8 September 2020, No. 1115 (2020).

The organisation of distance learning requires an appropriate regulatory framework in educational institutions. This includes a charter with relevant provisions, decisions of the pedagogical council, orders of the director, and an approved internal quality control system (Shuliak *et al.*, 2024). The specifics of distance learning require parents to create appropriate conditions for their children's education, provide technical means, access to the Internet, and monitor compliance with the principles of academic integrity (Education Analyst, 2023). Labour relations have also changed during martial law. The introduction of distance learning does not mean that teachers automatically switch to remote work. This requires appropriate orders on the transition to remote work, which define the rights and obligations of employees and employers. Teachers should be provided with the necessary technical means or receive compensation for using their own (Kyselov & Palekha, 2022; Tkachenko & Pavlenko, 2023).

The organisation of distance learning under martial law is based on the following theoretical principles: flexibility and adaptability of educational programmes, continuity of education, psychological support for participants in the educational process, and technical support (Garbe *et al.*, 2020). The flexibility and adaptability of educational programmes are a key factor that allows for a quick and effective response to changing conditions, including the possibility of switching between full-time and distance learning. Continuity of education means ensuring a continuous educational process even in the event of evacuation or relocation of students and teachers (Zhukova & Tkachenko, 2023). Psychological support for participants in the educational process is an important aspect that helps reduce stress and anxiety arising from the hostilities (Dichek & Kravchenko, 2024). Technical support includes providing the necessary equipment and Internet access for the effective conduct of classes. In the context of martial law in the frontline areas, the main task is to ensure the safety of participants in the educational process. Constant danger due to hostilities, interruption of classes due to air raids, and risks to the lives and health of students and teachers pose serious obstacles to the organisation of remote learning. Additionally, technical and infrastructural problems, such as insufficient access to the Internet, missing or damaged equipment, and power outages, make it impossible to have stable access to online resources (Zahorodnia & Mishchenko, 2023). Social and psychological aspects also play an important role in the organisation of distance learning. The stress and anxiety caused by the war, the disunity of teams, the lack of

live communication, and the need for psychological support for both students and teachers create additional challenges for the educational process (Dichek & Kravchenko, 2024). The forced relocation of students and teachers to safer regions, problems with integration into new educational environments, and the lack of necessary documents to continue their studies also complicate the situation.

Distance learning in frontline areas requires the implementation of special measures and initiatives. One of these measures is the transition to distance learning using online platforms for classes, the introduction of blended learning where possible, and the use of special programmes such as Learning Without Borders to provide access to learning materials. Providing the technical infrastructure, including the necessary equipment (laptops and tablets) and free Internet access for educational purposes, is crucial to the success of distance learning (Carter Jr *et al.*, 2020; Bakhov, 2021). Cooperation with providers to ensure stable connectivity in difficult conditions is also an important aspect. Social and psychological support for participants in the educational process includes organising online consultations with psychologists, conducting group classes to support social interaction, and providing access to resources to help overcome stress and anxiety. The adaptation of curricula involves developing individual schedules for students who cannot attend classes as usual, providing academic mobility opportunities for students from frontline areas, and introducing simplified procedures for transferring students to other educational institutions (Marynchenko *et al.*, 2022; Dichek & Kravchenko, 2024).

Integration of internally displaced persons (IDPs) into the educational process is an important aspect of distance learning. Admitting students without the necessary documents or with copies of those documents, creating conditions for continuing their studies in safer regions, and providing access to resources and support for integration into new educational institutions are key elements of this strategy (Ministry of Education and Science of Ukraine, 2023). An example of good practice is the Learning Without Borders project, a joint initiative of the Ministry of Education and Science, the Ministry of Culture, Ukrainian TV channels, and online platforms that broadcast video lessons for students in grades 5-11 in various subjects, engaging a wide range of students from different regions of Ukraine. Distance learning during martial law addresses many of the challenges faced by education in Ukraine but requires the combined efforts of parents, students, and teachers. The support of the state is important, as it should provide a regulatory framework and funding for the proper organisation of the educational process in the context of military conflict.

The impact of war on education is a global issue, with numerous countries experiencing significant disruptions to their educational systems due to armed conflict. The situation in Ukraine is not unique in this regard, and examining international experiences can provide valuable insights into mitigating the adverse effects of war on education. According to international reports, such as the one

by Concern Worldwide (2023), conflict zones often see a drastic decline in educational participation and quality. The destruction of infrastructure, the displacement of populations, and the psychological trauma inflicted on both students and teachers create substantial barriers to education. In Ukraine, similar challenges have been observed, where the ongoing conflict has led to the destruction of thousands of educational institutions and forced a significant shift to distance learning. However, international experiences show that despite these challenges, education can continue with the implementation of specific strategies. These include the adaptation of curricula to conflict conditions, the provision of psychosocial support to learners, and the use of technology to facilitate remote learning. For instance, in countries like Syria and Yemen, educational programmes have been adapted to include psychosocial support, and community-based education has played a crucial role in continuing learning in areas where formal schooling is disrupted. Additionally, the integration of technology has allowed for the continuation of education in settings where traditional schooling is not feasible. In Ukraine, similar approaches have been adopted, with the use of online platforms like the All-Ukrainian School Online, which aligns with global practices observed in other conflict-affected regions. The adaptation of these strategies within the Ukrainian context highlights the potential for resilience in education even amidst ongoing conflict, emphasising the importance of international cooperation and knowledge sharing in addressing educational challenges in crisis settings. The experience from other war-torn regions underscores the importance of a flexible and adaptive educational framework that can respond to the dynamic challenges posed by war, ensuring that education remains accessible and effective for all students, regardless of their circumstances.

This study, similar to that of S. Semerikov *et al.* (2023), identified the main challenges faced by students in distance learning under martial law. Both studies highlight significant difficulties related to the technical infrastructure and the psychological state of the participants in the educational process. While this study focuses on the issues of technical and psychological support, M. Shlenova *et al.* (2023) compare distance learning during the COVID-19 pandemic and martial law, offering insights into the evolution of approaches and methods in these different crisis conditions. They focus on the changing approaches to learning and the use of technology that has evolved over time. The study by N. Dichek & O. Kravchenko (2024) focuses on social and psychological assistance for children during martial law, which is an important aspect of maintaining the psycho-emotional state of participants in the educational process. The importance of integrating psychological care and support to ensure effective learning is considered, complementing the findings on the necessity of a comprehensive approach to distance learning. Overall, the findings are consistent with those of other studies, highlighting the importance of technical infrastructure and psychological support in times of crisis. However, this approach is more

focused on the specific aspects of martial law in Ukraine, while other studies look at broader contexts or compare different crisis situations.

The research into the educational process under martial law in Ukraine has necessitated the use of unconventional and theoretical approaches due to the dangers and logistical challenges of collecting data in frontline areas. Traditional empirical methods were replaced with theoretical methods such as generalisation, analysis, comparison, and systematisation. These methods allowed for a comprehensive and nuanced understanding of the impact of martial law on education. By synthesising findings from various legislative documents, educational directives, and scholarly articles, the study provided critical insights into the systemic effects of the conflict on education. The analysis of key legislative documents and the comparative study of different regional approaches enabled the identification of best practices and unique challenges. Systematisation offered a structured understanding of the educational system's various components and their interactions under crisis conditions. Overall, this rigorous theoretical framework facilitated the development of informed recommendations to enhance the organisation of distance learning in Ukraine's frontline territories during martial law, ensuring continuity and quality of education amidst the ongoing conflict.

CONCLUSIONS

The study showed that the organisation of the educational process in the frontline territories of Ukraine during martial law has faced numerous challenges, including the

destruction of infrastructure, frequent air raids, power outages, and poor internet connections. Despite these difficulties, distance learning has become a necessary step to ensure the continuity of education. Most schools were equipped with shelters, and classes were held in a blended or distance learning format, which required the adaptation of educational programmes to maintain their quality in the face of crises. An analysis of international experiences has shown that it is important to support the psycho-emotional state of participants in the educational process, especially children, by providing social and psychological assistance. Ukrainian society should actively fight for equal educational opportunities for children, as education is the foundation for the development of any society and the future recovery of the country.

Prospects for further research include the development and implementation of new models of distance learning that take into account the specific conditions of the frontline areas, as well as the creation of effective strategies to support the educational process in the face of prolonged crisis situations. Additionally, it is necessary to continue researching the impact of war on the psycho-emotional state of students and to develop psychological support programmes that would help maintain and improve children's mental health during the war.

ACKNOWLEDGEMENTS

None.

CONFLICT OF INTEREST

None.

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Олексій Плахотник

Здобувач ступеня доктора філософії, аспірант
Класичний приватний університет
69002, вул. Жуковського, 70 Б, м. Запоріжжя, Україна
<https://orcid.org/0009-0002-1816-7434>

Сергій Бур'ян

Здобувач ступеня доктора філософії, аспірант
Класичний приватний університет
69002, вул. Жуковського, 70 Б, м. Запоріжжя, Україна
<https://orcid.org/0009-0008-5917-6891>

Організація освітнього процесу в дистанційному форматі навчання на прифронтових територіях у період дії воєнного стану в Україні

Анотація. Аналіз сучасних підходів до організації дистанційного навчання на прифронтових територіях України в умовах воєнного стану є вкрай важливим для забезпечення безперервності освіти в умовах кризи. Це дослідження мало на меті визначити основні виклики та перспективи дистанційного навчання, зокрема шляхом аналізу міжнародного досвіду та оцінки ефективності впроваджених моделей навчання. Для цього було використано описовий підхід, що передбачає традиційний аналіз документів, системний підхід, методи аналізу та синтезу. Основними об'єктами аналізу були Закони України, постанови, розпорядження Кабінету Міністрів України, накази та листи Міністерства освіти і науки, прийняті після 24 лютого 2022 року. Дослідження виявило, що ключовими викликами для організації дистанційного навчання на прифронтових територіях є забезпечення безпеки учасників освітнього процесу, брак технічних засобів та ресурсів, а також психологічні труднощі для студентів та викладачів. Впровадження новітніх технологій та адаптація методик викладання можуть значно підвищити ефективність дистанційного навчання в умовах кризи. Сформульовано рекомендації щодо вдосконалення освітнього процесу, які включають інтеграцію інноваційних технологій, підвищення кваліфікації викладачів та психологічну підтримку всіх учасників освітнього процесу. Практична цінність дослідження полягає у можливості застосування цих рекомендацій для покращення організації освіти у прифронтових районах України, забезпечення безперервності освіти в умовах воєнних дій та підвищення загальної якості освіти. Результати дослідження можуть бути використані при розробці національних стратегій дистанційного навчання під час кризових ситуацій та сприяти вдосконаленню нормативно-правової бази в освітній галузі

Ключові слова: дистанційне навчання; прифронтова освіта; військовий конфлікт; неперервність освіти; стратегії навчання; освітні інновації

UDC 374.7.091(477)

DOI: 10.52534/msu-pp3.2024.17

Svitlana Leknitska*

PhD in Philology, Associate Professor
 Bogomolets National Medical University
 01601, 13 T. Shevchenko Blvd., Kyiv, Ukraine
<https://orcid.org/0000-0002-9178-7069>

Ivanna Sakhanda

PhD in Pharmacy, Associate Professor
 Bogomolets National Medical University
 01601, 13 T. Shevchenko Blvd., Kyiv, Ukraine
<https://orcid.org/0000-0003-4171-5160>

The development of educational gerontology in Ukraine under martial law

Article's History:

Received: 10.06.2024

Revised: 03.09.2024

Accepted: 25.09.2024

Suggested Citation:

Leknitska, S., & Sakhanda, I. (2024). The development of educational gerontology in Ukraine under martial law. *Scientific Bulletin of Mukachevo State University. Series "Pedagogy and Psychology"*, 10(3), 17-28. doi: 10.52534/msu-pp3.2024.17.

Abstract. The full-scale military invasion of the Russian Federation aggressor country into Ukraine has led to the mobilisation of Ukrainian citizens of the draft age and caused a reduction in the labour market of young and middle-aged specialists. To support the labour market and economy of Ukraine, the need arose to introduce elderly people into the educational system. Therefore, the main aim of this article was to determine the specific grounds for developing educational gerontology during the full-scale military invasion of Ukraine. The data for the research were assessed using quantitative and qualitative methods, including questionnaires, observation, and analysis of data and documents. The study of the main fields of educational gerontology chosen by elderly people revealed the following: digital technology, management, health and wellness, language and culture, creative arts, engineering and infrastructure, agriculture, and logistics and supply. Researchers of educational gerontology in the USA and European countries (including Ukraine up to February 2022) identified the main reasons for the need to include elderly persons in the educational process, namely: loneliness, mental health support, and socialisation. After February 2022, the main reasons for including the elderly in the educational process expanded to include the shortage of specialists in various fields of the economy due to the mobilisation of young and middle-aged adults into the Armed Forces of Ukraine, the tragic loss of life from the bombings of Ukrainian cities and villages, and the outflow of human resources abroad. These circumstances necessitate the development of adult learning strategies and the establishment of a network of educational gerontology institutes, which will provide mental health support for the elderly and include them in the socio-economic environment

Keywords: adult education; digital education; mobilisation; outflow of human resources; learning strategies; country's economic support

*Corresponding author

INTRODUCTION

Since the early 1960s, there has been a steady increase in interest in the education and training of elderly people. Education for the elderly is about remaining curious, seeking out new information, and adapting to new challenges and changes. Continuous learning can enhance personal growth, professional development, and overall well-being.

It allows individuals to stay relevant in an ever-changing world, keep their minds sharp, and open up new opportunities for personal and career advancement. Embracing lifelong learning is essential in today's fast-paced and dynamic society. Additionally, acquiring new skills and knowledge can improve job prospects and financial stability, leading to



decreased stress levels and a healthier lifestyle. Moreover, continuous learning contributes to a longer, healthier, and more fulfilling life. Studies have shown that keeping the brain active through activities like reading, learning new skills, and engaging in social interactions can help maintain cognitive functioning and potentially decrease the risk of developing dementia.

Researchers investigating the primary reasons for the development of educational gerontology have identified improvements in the mental health and well-being of elderly people through their inclusion in the educational process. In the USA and Europe, adhering to global trends, a wide range of services is provided to meet the diverse needs and interests of elderly individuals. These services include meal programmes, referral assistance, health services, recreational workshops, volunteering opportunities, learning programmes, employee assistance, and intergenerational activities (Formosa & Galea, 2020). Moreover, N. James & V. Thériault (2020) discovered in their article that despite the global challenge of COVID-19, the adult learning sector, while facing particularly difficult financial conditions, continues to demonstrate its resilience by going above and beyond to provide flexible, learner-centred solutions to keep adults in education and reach the most vulnerable groups. They also found that local authority adult education services produced online responses that reduced isolation and improved mental health and well-being. Recent studies have discussed learning needs in healthy and active ageing. This study reports on consultations with prospective students, employers, older people, and academics regarding the knowledge areas to be included in the course. An anonymous online survey gathered data from participants and stakeholders in Ireland, Slovenia, Austria, Portugal, Finland, and Greece. Participants ranked the importance of 14 broad knowledge areas and linked topics. The influence of participant characteristics on decisions was examined using multivariate regression modelling. Across all stakeholder groups (total sample $N = 757$), health promotion was most often deemed very important (80%), followed by psychology (73%), and social inclusion and engagement (71%) (Wiggin *et al.*, 2023). Researchers in the field of educational gerontology aspire to improve the quality of education and, beyond that, the quality of life for seniors, addressing unique challenges they face as they age (Boeren, 2018; Menéndez *et al.*, 2018). Furthermore, E. Boeren (2018) sought to better understand the situation in educational gerontology by reviewing journal articles reporting on research in this field. Differences in methodological strengths and weaknesses between formal education and educational gerontology were discussed, followed by a data mining exercise on 1,089 journal articles published in *Adult Education Quarterly* and *Studies in Continuing Education*.

Moreover, a group of scientists, led by S. Menéndez *et al.* (2018), conducted a systematic review of scientific literature published between 1980 and May 2017 across various databases (ProQuest Psychology Journal, ERIC, Sociological Abstracts, and Social Science Citation Index),

from which 1,663 works were extracted. By analysing the articles and their main themes, they identified a specific profile of educational gerontology students, their reasons for attending (health and well-being, social inclusion and engagement), the perceived benefits of attending, and several factors that could be optimised in research in these areas of formal education, particularly the methodological aspects. Empirical research focusing on university programmes designed for older people in Europe is currently at an early stage and requires further development. Educational gerontology is a field that also focuses on the health and well-being of seniors. It includes a wide range of topics, encompassing age-related health conditions, social issues, and healthcare services for senior adults.

Researchers M. Formosa & R. Galea (2020) analysed the educational gerontological programme for individuals attending a Maltese senior centre. Pretest-posttest focus groups found the learning programme to be successful in improving learners' levels of personal empowerment and helping to maintain mental well-being. Educational gerontology remains firmly rooted in the "successful ageing" paradigm, which seeks to overcome the challenges associated with the later stages of life, often characterised by ill-health and loss of socialisation. The authors hoped that this research project would act as a catalyst for future studies in educational gerontology, framed within a fourth-age social field. Lifelong learning is the concept of continuously acquiring new knowledge and skills one's entire life, not just during formal education. Additionally, staying physically active, consuming healthy food, getting enough sleep, and managing stress are also important factors in maintaining brain health. This article aimed to summarise research that identifies the main reasons for the existence of educational gerontology around the world, with a focus on creating equitable educational environments for elderly people. It also seeks to explore the specific factors driving the increased necessity for the development of educational gerontology during the full-scale military invasion of Ukraine.

MATERIALS AND METHODS

The academic article employed both quantitative and qualitative methods, including surveys, observation, and data and document analysis. The individual surveys were conducted during the periods 2020-2022 and 2022-2024, using correspondence, Google Forms, and paper questionnaires. The survey included a combination of multiple-choice and open-ended questions to gather both quantitative and qualitative data. The survey was anonymous and contained six questions (sex, age, educational level, place of residence, involvement in the educational process, and field of educational programme). During the survey, all ethical standards of the Declaration of Helsinki (2013) were observed, and all participants were informed about how their provided information would be used. The purpose of the survey was to assess the level of participation in educational gerontology and the selection of fields in educational programmes. Additionally, the study utilised the experiences of the USA,

Europe, and Ukraine in organising educational gerontology systems. An analysis was conducted on 102 questionnaires from elderly individuals filled out during the COVID-19 pandemic. The age range of participants was 60 to 86 years, with an average age of 69 ± 1.2 years. Most elderly individuals (78%) were involved in educational gerontology. The study of participants' educational levels showed that 17.6% of respondents had doctoral degrees, 29% had higher education, 35.3% had secondary specialised education, and 18.1% had general secondary education. The analysis of place of residence revealed that 74.5% lived in urban areas, and 25.5% in rural areas. Furthermore, during the martial law period, an analysis of 118 questionnaires from elderly individuals was conducted. The study found that the number of men involved had increased by 42%, compared to 26% previously, while the number of women involved had decreased by 36%, compared to 52%. The age range remained 60 to 86 years, with an average age of 69 ± 1.2 years. Most elderly individuals (77.9%) were involved in educational gerontology. The study of participants' educational levels showed that 10% of respondents had doctoral degrees, 31% had higher education, 39% had secondary specialised education, and 20% had general secondary education. According to the figures, the analysis of place of residence revealed that 68% lived in urban areas, and 32% in rural areas. The study also noted that the percentage of rural residents had increased by 32%. In addition, the figures showed a rise in the participation of elderly individuals aged 66-76 years in educational gerontology. After a detailed analysis of each experience, comparisons were made based on sex, age, educational level, field of study, and place of residence. The comparison was based on a set of key indicators, including those from European, USA, and Ukrainian educational gerontology in the following categories: sex, age, educational level, field of study, and place of residence. A statistical analysis was conducted to calculate the quantitative correlation between the main categories of elderly individuals involved in educational gerontology and the range of fields they studied. The study also analysed the international aspect of educational gerontology, focusing on support for older adults who migrated to new countries or communities due to the full-scale military invasion by the aggressor country into Ukraine. The analytical analysis of a survey of employers conducted in 2024 through the Ukrainian platform Robotu.ua was used to examine labour market data regarding the shortage of specialists in various fields.

RESULTS

Educational gerontology in Europe is diverse and varies from country to country. A significant number of European countries have well-established systems of educational gerontology or adult education, offering a range of programmes and courses to help seniors further their education and develop new skills. Some countries, such as Sweden and Finland, have a strong tradition of lifelong learning, and adult education is widely accessible. In recent years, there has been a growing emphasis on digital skills and lifelong

learning initiatives across Europe aimed at upskilling adults for the future job market. Additionally, many European institutions also offer education programmes in areas such as language learning, vocational training, management, and personal development. Overall, educational gerontology in Europe plays a crucial role in promoting social inclusion, enhancing employability, and fostering personal growth. It is an important tool for empowering individuals and building a more skilled and knowledgeable workforce. Gerontology includes the study of social, cultural, psychological, cognitive, and biological aspects of ageing. Two main types of gerontology can be distinguished: social gerontology and biogerontology. Biogerontology focuses on the biological aspects of ageing. Social gerontology studies the social aspects of ageing and older adults. It examines how societies perceive and treat seniors, as well as the social factors influencing the ageing process. This field explores topics such as retirement, social support, intergenerational relationships, elder abuse, and ageism. Researchers in social gerontology aim to understand how ageing is impacted by social structures and practices, and how seniors navigate societal changes as they age. Social gerontology involves advocating for policies and programmes that support the needs of older people, such as access to healthcare, social services, housing, education, and employment opportunities. The purpose of social gerontology is to ensure that seniors can age with dignity and receive the support they need to live fulfilling lives. It is also essential to develop the social aspects of ageing and design programmes that offer social engagement, inclusion, and meaningful relationships among older adults. The study of cognitive ageing seeks to understand how cognitive functions change with age and to develop strategies for maintaining cognitive health through educational interventions. According to the UNESCO Institute for Lifelong Learning (2019), adult education can be categorised into three main types: literacy and foundational skills; continuing education and professional training focused on vocational abilities; and liberal, popular, and community education, which highlights the importance of skills for active citizenship. The right to higher education is guaranteed regardless of age, citizenship, place of residence, sex, colour, social and property status, nationality, language, origin, health status, attitude to religion, criminal record, as well as other circumstances. No one can be limited in the right to higher education, except in cases established by the Constitution and laws of Ukraine (The Law of Ukraine "On Higher Education"). In the United States and Europe, adult education programmes serve a diverse range of age groups, including young adults (ages 18-30) who may be looking for high school equivalency or vocational training; middle-aged adults (ages 31-59) who may seek further education for career advancement or personal development; and older adults (60 and above) who may be interested in lifelong learning opportunities or skill development post-retirement. This range of age groups is a general breakdown, and adult education programmes can serve individuals of various ages with different learning goals and needs.

Educational gerontology refers to the study of ageing and its impact on the educational process. It aims to clarify understanding of how individuals of different ages learn, teaching strategies that meet the needs of elderly learners, and the role of education in promoting healthy ageing. In the field of gerontology, educators work to create inclusive and age-friendly learning environments that support lifelong learning for older adults. This can involve designing curricula that acknowledge the diverse needs and experiences of older learners, as well as incorporating technologies that facilitate learning for individuals of all ages. Overall, educational gerontology seeks to enhance the educational opportunities and experiences of elderly persons. Educational gerontology also refers to the study and practice of designing and implementing educational programs specifically tailored to meet the needs and interests of elders. These programmes are aimed at promoting lifelong learning, enhancing cognitive abilities, and encouraging social interactions among elders to improve their overall quality of life. Educational gerontology seeks to create engaging and stimulating educational experiences that empower individuals to continue growing and thriving as they age by understanding their unique learning styles and preferences.

In Europe, educational gerontology is organised by a variety of institutions and organisations, including universities and colleges, non-profit organisations, government agencies, private companies, and online platforms. Higher education institutions provide a wide range of lifelong learning programmes for elderly persons, including continuing education courses, distance learning programmes and vocational training. A significant number of non-governmental organisations such as the International Association of Universities of the Third Age (I.A.U.T.A.) and community groups like the Educational Gerontology Special Interest Group (SIG) in Europe, offer educational gerontology programmes to support personal and professional development. I.A.U.T.A. unites universities for seniors from all continents. For over four decades, it has championed the cause of the elderly through lifelong education, promoting university exchanges and, most importantly, fostering innovations in education and scientific research to help everyone find their place in society. Furthermore, in Ukraine, the non-governmental organisation “Association of Universities of the Third Age “Clepsydra” was established. The purpose of this organisation is to ensure the sustainable development of the universities of the third age system by involving older people in the socio-economic development of Ukraine and promoting active longevity. In addition, national and government institutions often supply funding and support for senior education initiatives, including language courses, job training programmes and computer literacy classes. Some European businesses (e.g., TechWolf, Reforge, STRIVR) offer workplace training and skills development programmes for their employees to enhance their knowledge and capabilities. Such companies provide skill infrastructure powered by AI and APIs to enhance existing platforms with high-quality skill data. By

integrating with the systems where employees perform their work, TechWolf ensures accurate and up-to-date skill information, enabling organisations to quickly infer the skills of positions, identify gaps, and analyse skills data to discover trends and opportunities for educational development and improvement. This also tracks progress towards the companies’ goals. With the rise of digital technology, online learning platforms have become increasingly popular, especially for elderly persons seeking to acquire new skills or knowledge to support their psychological and physical well-being. The European researchers Gwyneth Allatt and Lyn Tett found that skills-related education is prioritised, with a focus on economic growth through increased productivity and accountability. As revealed, educational gerontology in Europe is diverse and inclusive, with various stakeholders working together to provide accessible and high-quality learning opportunities for elderly persons across the continent.

Educational gerontology in the USA refers to educational programmes that help elderly persons improve their literacy, numeracy, and basic skills. These programmes are often offered in community colleges, adult education centres and online platforms. They cover a range of subjects, including English as a Second Language (ESL), GED preparation, vocational training, and computer skills. Educational gerontology is important for helping adults to further their career opportunities, pursue higher education, improve their quality of life, and assist in psychological adaptation. In addition, a group of scientists emphasises the importance of lifelong learning to support citizenship education, enable opportunities for everyone, and foster participation in the complex decision-making processes needed to create a sustainable world (Tang, 2017; Webb *et al.*, 2019). Furthermore, increasing lifelong learning and local problem-solving may be key to dynamic social improvements and ultimately a more stable and successful society (Zhang & Perkins, 2022).

The promotion of educational gerontology in the USA is comprehensive and integrated, offering a variety of institutions, programmes and initiatives. The institutions of educational gerontology include community colleges, universities, adult education centres, non-profit organisations and online learning platforms. Universities and colleges in the USA provide continuing education programs for elderly persons, including certificate programmes, professional development courses, and degree completion programmes. Additionally, community colleges offer a wide range of programmes such as adult basic education (ABE), English as a Second Language (ESL), high school equivalency (GED), and vocational training. Adult education centres offer courses and services designed specifically for elderly learners, such as literacy classes, job training, and career counselling. The National Coalition for Literacy and Pro-Literacy supplies resources, advocacy, and support for elderly persons’ education programmes throughout the USA. With the rise of online education, numerous platforms offer senior education courses and programmes facilitating

access to educational opportunities for elderly persons from anywhere. The main characteristics of senior education in the USA reflect a commitment to lifelong learning, skill development, community engagement, and psychological support. The main reasons for senior education in the USA include providing opportunities for lifelong learning and skill development for those who did not have the opportunity to complete their education earlier in life or who desire to advance their careers. Additionally, some factors encourage people to join educational gerontology programmes, including loneliness, mental health support, and socialisation. As a result, educational opportunities for elderly persons aim to empower seniors to achieve their personal and professional goals, avoid loneliness and mental health issues, and contribute to society in meaningful ways.

The reasons for the existence of educational gerontology in Ukraine are similar to those elsewhere, such as providing elderly persons with the opportunity to continue their learning and development in addition to formal education, including the acquisition of new skills for personal and professional advancement, improving job prospects, or even pursuing intellectual interests. Educational gerontology is regarded as a means to promote lifelong learning and to ensure that elderly persons have the educational resources needed to adapt to changes in the workforce and society. That is why various programmes and initiatives are offered to different age groups. There are senior learning centres and senior education courses specifically designed for elderly persons who wish to learn new skills, pursue hobbies, or simply keep their minds active. Ukrainian researchers have found that the education of elderly people is an indicator of the cultural, moral, scientific, and technical development of the country. In particular, the Concept of Adult Education in Ukraine outlines the importance of adult education in the country. Ukrainian scholar O. Anishchenko (2021) also notes that Third Age universities operate across all regions of Ukraine as social projects promoting the principles of lifelong learning. The most common areas of study include linguistics, psychology, health, information and

communication, law, economics, the arts, and more. Educational gerontology focuses specifically on understanding the learning needs and capabilities of older adults, typically those aged 60 and older, while adult education is a broader field that encompasses education for adults of all ages. Educational gerontology is more concerned with the unique developmental, cognitive, social, and emotional aspects of ageing, whereas adult education may cover a wide range of topics and approaches for adult learners of various ages and backgrounds. Furthermore, educational gerontology often emphasises promoting positive ageing and enhancing the quality of life in older adults through education and may also focus on professional development, personal enrichment, and literacy skills.

Elderly persons choose lifelong learning in a wide range of fields, such as digital technology, business and finance, management, health and wellness, language and culture, creative arts, personal development, science, and the environment. In the field of digital technology, elderly persons often elect to enhance or continue learning about new technologies, software, and programming languages to stay up-to-date in the rapidly changing digital landscape. Pursuing further education in business management, accounting, economics, or investing can advance their careers or help them start their own businesses. A healthy lifestyle can support learning in educational fields such as nutrition, exercise science, mental health, and holistic wellness. To express themselves creatively, explore new passions, and even find a favourite hobby, elderly persons can choose to learn in areas such as visual arts, music, writing, or design. Learning new languages or deepening their knowledge of different cultures can broaden perspectives and facilitate cross-cultural communication. Similarly, lifelong learners often engage in personal development courses to improve skills such as communication, leadership, time management, or emotional intelligence. Additionally, elderly persons interested in science and environmental issues may choose to develop further education in fields such as biology, environmental science, and sustainability.

Table 1. Characteristics of study participants involved in educational gerontology, 2020-2022

Variable	Number of participants	Involved in educational gerontology	
		yes	no
Sex, n%			
Male	39 (38%)	27 (26%)	12 (12%)
Female	63 (62%)	53 (52%)	10 (10%)
Age, n%			
60-65	46	44 (43%)	2 (2%)
66-70	22	16 (16%)	6 (6%)
71-76	23	13 (13%)	10 (9%)
77-81	7	7 (7%)	0 (0%)
82-86	4	0 (0%)	4 (4%)
Educational level, n%			
Secondary school	18	7 (7%)	11 (11%)

Table 1. Continued

Variable	Number of participants	Involved in educational gerontology	
		yes	no
Secondary special	36	34 (33%)	2 (2%)
High	30	22 (21.5%)	8 (8%)
Doctorates	18	17 (16.5%)	1 (1%)
Place of residence, n%			
Urban	76	72 (70.5%)	4 (4%)
Rural	26	8 (8%)	18 (17.5%)

Source: developed by the authors

The data in Table 1 demonstrate that 78% of respondents were involved in educational gerontology, of whom 26% were male and 52% were female. In exploring the age groups of participants, it was established that the group aged 60-65 dominated, comprising 43%. The smallest age group was that of participants aged 77-81, which constituted 7%. Moreover, there were no participants aged 82-86. Analysis

of the groups according to educational level revealed that the largest group of participants possessed secondary special education (33%), while the smallest group had secondary education (7%). A review of the place of residence indicated that the urban group dominated, making up 70.5%. The data in Table 2 represent the main fields in educational gerontology and the number of participants involved in each.

Table 2. Characteristics of the range of fields in educational gerontology, 2020-2022

Variable	Number of participants	Range of fields				
		Digital technology	Management	Health and wellness	Language and culture	Creative arts
Sex. n%						
Male	27 (34%)	16 (59%)	4 (15%)	5 (19%)	2 (7%)	0 (0%)
Female	53 (66%)	13 (24%)	8 (15%)	10 (19%)	12 (23%)	10 (19%)
Age. n%						
60-65	44	23 (29%)	11 (14%)	1 (1%)	7 (8.75%)	2 (3%)
66-70	16	5 (6%)	1 (1%)	5 (6%)	4 (4.75%)	1 (1%)
71-76	13	1 (1%)	0 (0%)	7 (8.75%)	2 (3%)	3 (3.75%)
77-81	7	0 (0%)	0 (0%)	2 (3%)	1 (1%)	4 (4.75%)
81-86	0	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Educational level. n%						
Secondary school	7	2 (28.6%)	0 (0%)	0 (0%)	0 (0%)	5 (71.4%)
Secondary special	34	18 (53%)	1 (2.9%)	7 (20.6%)	6 (17.6%)	2 (5.9%)
High	22	4 (18%)	5 (22.7%)	6 (27.3%)	5 (22.7%)	2 (8.3%)
Doctorates	17	5 (29%)	6 (35%)	2 (11.8%)	3 (17.6%)	1 (6.6%)
Place of residence. n%						
Urban	72	27 (37.5%)	12 (16.7%)	13 (18%)	14 (19%)	6 (8.8%)
Rural	8	2 (25%)	0	2	0	4 (75%)

Source: developed by the authors

The analysis of 80 questionnaires from elderly people who were involved in educational gerontology identified the main ranges of fields in educational gerontology, including digital technology (36%), management (15%), health and wellness (18.75%), language and culture (17.5%), and creative arts (12.5%). Elderly individuals aged 60 to 65 years

chose fields such as digital technology (29%), management (14%), and language and culture (8.7%). Those aged 66 to 70 mainly preferred fields such as digital technology (6%), health and wellness (6%), and language and culture (4.75%). Participants aged 71 to 76 primarily selected fields such as health and wellness (8.75%), creative arts (3.75%),

and language and culture (3%). Individuals aged 77 to 81 largely opted for fields such as creative arts (4.75%), health and wellness (3%), and language and culture (1%). The study of the educational levels of participants revealed that respondents with doctoral degrees mostly chose management (35%) and digital technology (29%). Respondents with higher education primarily selected health and wellness (27.3%) and language and culture (22.7%). Those with secondary special education opted for digital technology (53%) and health and wellness (20.6%), while participants with general secondary education preferred creative arts (71.4%) and digital technology (28.6%). The analysis of place of residence showed that urban residents primarily selected digital technology (37.5%), while rural residents mainly chose creative arts (75%).

In elderly education, the organisation of practical classes varies from traditional practical class settings in several ways, such as flexible scheduling, hands-on learning, individualised instruction, collaborating learning, and a focus on practical outcomes. Practical classes in educational gerontology are typically designed to provide individualised instruction and support to meet the unique needs of each learner. Moreover, flexible schedules are often offered during evenings and weekends to accommodate the busy schedules of elderly learners who may be working full-time or caring for their families. Additionally, practical classes focus on real-world skills and hands-on learning experiences that apply to the learner's professional or personal lives. Such types of learning include activities such as workshops, simulations, and group projects. Furthermore, elderly learners often have diverse backgrounds, experiences, and learning styles. Practical classes often emphasise collaborative learning experiences, where learners work together in groups to solve problems, share ideas, and learn from each other's experiences. In contrast to the traditional organisation of classes, senior education prioritises practical classes aimed at achieving practical outcomes and skills that can be applied immediately in the learner's lives or workplaces.

Promoting inclusion in gerontology education can help elderly people remain intellectually engaged, socially connected, and emotionally fulfilled as they continue to learn and grow throughout their lives. Moreover, designing educational settings and technologies that are accessible and accommodating for elderly persons should encompass

age-friendly environments, considering their unique needs and preferences. The concept of educational gerontology reflects the processes in which elderly people are engaged, both individually and in cooperation with others, and as a result, they integrate their own ways of knowing. Educational gerontology encompasses different areas, such as lifelong learning, cognitive ageing, social gerontology, and age-friendly environments. Lifelong learning promotes continuous learning opportunities for elderly persons to boost their cognitive abilities, acquire new skills, and participate in social activities (Pardasani & Thompson, 2012).

This study also identified key reasons for the increased importance of educational gerontology in Ukraine after the full-scale military invasion of Russia. According to labour market data, the mobilisation of young and middle-aged adults to the Armed Forces of Ukraine, combined with the tragic loss of numerous lives due to the bombings of Ukrainian cities and villages, has created a shortage of specialists in various fields. This lack of specialists is putting a strain on the Ukrainian labour market and economy. This situation has necessitated support for the country's economy by attracting and encouraging elderly persons to enter the labour market and, accordingly, to the educational process. Thus, the development of educational gerontology is very pertinent. Some sectors of the country's economy are generally more affected due to the loss of professionals and the overall impact of the situation. According to labour market statistics, the shortage of specialists is evident in fields such as healthcare, engineering and infrastructure, digital technology, education, agriculture, logistics, and supply. A survey conducted by the Ukrainian platform Robota.ua in 2024 revealed the following data: 32.4% of companies experienced a reduction of specialists by 1-5 employees (13%), while 19.4% of companies reported a reduction of 5 or more employees (20%). 75.1% of respondents noted the existence of a shortage of qualified specialists in the labour market. To overcome this shortage, employers are implementing various measures, including the retraining of employees (53.5%), automation of processes (23.9%), creating programmes for elderly persons (8.8%), and hiring specialists from other countries (3.6%) (What do you need to know..., 2024). The data in Table 3 demonstrate the study of participants involved in educational gerontology during 2022-2024.

Table 3. Characteristics of study participants involved in educational gerontology, 2022-2024

Variable	Number of participants	Involved in educational gerontology	
		yes	no
Sex, n%			
Male	61 (52%)	49 (80%)	12 (20%)
Female	57 (48%)	43 (75%)	14 (25%)
Age, n%			
60-65	48	43 (89%)	5 (11%)
66-70	37	28 (76%)	9 (24%)
71-76	25	17 (68%)	8 (32%)

Table 3. Continued

Variable	Number of participants	Involved in educational gerontology	
		yes	no
77-81	6	4 (67 %)	2 (33%)
81-86	2	0 (0%)	2 (100%)
Educational level, n%			
Secondary school	24	14 (58%)	10 (42%)
Secondary special	46	42 (91%)	4 (9%)
High	36	29 (81%)	7 (19%)
Doctorates	12	7 (58%)	5 (42%)
Place of residence, n%			
Urban	80	68 (85%)	12 (15%)
Rural	38	24 (58%)	14 (42%)

Source: developed by the authors

An analysis of 118 questionnaires from elderly people filled out during martial law revealed that there were fewer women in the study – 57 and men – 61, which amounted to 48% and 52%, respectively. The study found that the number of involved men had increased by 42%, while the number of involved women had decreased by 36%. The age range was from 60 to 86 years, with an average age of 69 ± 1.2 years. Most elderly persons (77.9%) were involved in educational gerontology. The study of the educational level of participants showed that 10% of respondents had

doctoral degrees, 31% had higher education, 39% had secondary special education, and 20 % had general secondary education. According to the data, the analysis of place of residence showed that 68% were urban and 32% rural. The study also claims that the percentage of rural residents has risen by 32%. In addition, the number of elderly persons involved in educational gerontology has risen among those aged 66 to 76 years. The data in Table 4 show the main fields in educational gerontology and the number of participants involved in each during 2022-2024.

Table 4. Characteristics of study participants in the range of fields in educational gerontology, 2022-2024

Variable	Number of participants	Range of fields				
		Digital technology	Engineering and infrastructure	Agriculture	Language and culture	Logistics and supply
Sex, n%						
Male	49	18 (37%)	8 (16%)	8 (16%)	10 (20%)	5 (11%)
Female	43	15 (35%)	4 (9%)	0 (0%)	18 (42%)	6 (14%)
Age, n%						
60-65	43	14 (33%)	6 (14%)	4 (9%)	17 (40%)	2 (4%)
66-70	28	9 (32%)	2 (7%)	3 (11%)	8 (29%)	6 (21%)
71-76	17	7 (41%)	3 (18%)	1 (5%)	3 (18%)	3 (18%)
77-81	4	3 (75 %)	1 (25%)	0 (0%)	0 (0%)	0 (0%)
81-86	0	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Educational level, n%						
Secondary school	14	4 (29%)	0 (0%)	5 (35.5%)	0 (0%)	5(35.5%)
Secondary special	42	14 (33%)	12 (29%)	3 (7%)	7 (17%)	6 (14%)
High	29	11 (38%)	0 (0%)	0 (0%)	18 (62%)	0 (0%)
Doctorates	7	4 (57%)	0 (0%)	0 (0%)	3 (43%)	0 (0%)
Place of residence, n%						
Urban	68	25 (37%)	12 (18%)	0 (0%)	26 (38%)	5 (7%)
Rural	24	8 (33%)	0 (0%)	8 (33%)	2 (9%)	6 (25%)

Source: developed by the authors

The analysis of 92 questionnaires from elderly people who were involved in educational gerontology in Ukraine identified the main areas of the field in educational gerontology during martial law, such as digital technology (36%); engineering and infrastructure (13%); agriculture (9%); language and culture (30%); logistics and supply (12%). According to the labour market demand in Ukraine, the range of fields in educational gerontology has changed. Elderly people aged 60 to 65 years mostly choose fields such as digital technology (33%), engineering and infrastructure (14%), and language and culture (40%). Elderly people aged 66 to 70 years mainly prefer fields such as digital technology (32%), logistics and supply (21%), and language and culture (29%). Elderly people aged 71 to 76 years primarily select fields such as digital technology (41%), engineering and infrastructure (18%), and language and culture (18%). Elderly people aged 77 to 81 years largely opt for fields such as digital technology (75%) and engineering and infrastructure (25%). The study of the educational level of participants showed that respondents with doctorates mostly chose language and culture (43%), and digital technology (57%). Respondents with higher education preferred language and culture (62%) and digital technology (38%), those with secondary special education preferred digital technology (33%) and engineering and infrastructure (29%), and those with general secondary education preferred agriculture (35.5%) and logistics and supply (35.5%). The analysis of place of residence showed that urban residents primarily chose digital technology (37%) and language and culture (38%), while rural residents primarily chose digital technology (33%) and agriculture (33%).

The mobilisation and displacement caused by the conflict have led to a relocation of human resources away from critical sectors, exacerbating shortages and creating new challenges in Ukraine and neighbouring regions. This migration poses a new challenge for educational gerontology as it introduces complexities in providing education and support for older adults who have migrated to new countries or communities. Refugees may face language barriers, cultural differences, and a lack of access to resources tailored to their needs. Educational institutions and programmes in gerontology need to adapt and develop strategies to address the unique needs of this population, such as providing language support, culturally sensitive educational materials, and community resources to help elderly migrants integrate and thrive in their new environment. The primary reasons for migration can vary significantly based on individual circumstances, but some common factors include seeking better economic opportunities, escaping conflict or persecution, pursuing education or job opportunities, reuniting with family members, and searching for better living conditions. Economic factors such as poverty and a lack of job prospects are often cited as major drivers of migration, along with political instability and environmental factors such as natural disasters or climate change. The socio-economic inclusion of Ukrainian refugees in their host communities is crucial for their psychological and economic

well-being. Over the past two years, socio-economic inclusion has been strengthened for refugees.

The vast majority of refugees (74% women and 26% men) went abroad in the spring of 2022 (Ukrainian refugees. Future abroad and plans for return, 2024), during the first wave of mass migration, and hoped to return home within a few months. However, due to the dangerous situation in Ukraine, the duration of migration increased significantly, which necessitated further adaptation in the new country. Barriers to returning to Ukraine include loss of housing, the native settlement's occupation, deterioration of the security situation, and power outages. The best adaptation in the new country was facilitated by factors such as foreign language proficiency, knowledge of a demanded profession, relocating the family together, the presence of useful connections and friends, and the opportunity to join volunteer activities. Conversely, the most common obstacles in the adaptation process include ignorance of the foreign language, performing low-skilled work, and differences in mentality, culture, and lifestyle.

Among female migrants who were forced to go abroad, approximately 24% are women aged 60 and over. Unfortunately, the number of female migrants may increase significantly due to the ongoing fighting within Ukraine, which leads to the destruction of housing, enterprises, and institutions, thereby reducing the number of available jobs. Since female migrants need to support their families, particularly in economic terms, they must adapt as quickly as possible to socio-economic inclusion in countries that have become a refuge for migrants from Ukraine. These circumstances contribute to the development of global educational gerontology, which, through educational support, helps the elderly integrate into the socio-economic environment of the country that has sheltered the refugees. In particular, educational gerontology promotes the development of areas such as linguistics and IT technologies.

The scientific research presented in this paper builds upon the findings of leading scholars. The earliest recorded interest in education for older adults dates back to the 17th century in Jan Amos Komensky's (also known as Comenius) book "Pampaedia", where he introduced a model of lifelong education. Although Comenius' approach to education was normative and moralistic, the significance of his work lies in the fact that it was the first to systematically consider older adults as learners. He proposed self-directed learning as a suitable didactic method for adults (Kern, 2018). Nearly 300 years after Comenius, Wilma T. Donahue (1900-1993) at the University of Michigan revisited the topic, encouraging psychologists to study examples of educational activities for older adults in formal university courses on "adaptation to ageing", and presented innovative telecourses (lifelong programmes) such as "Living in the Later Years: Hobbies Put to Work" (Donahue, 1951). Meanwhile, in Germany, Otto Friedrich Bollnow (1903-1991) took an anthropological orientation, widening the focus on public education and defining the role of education in the older ages. Otto Friedrich Bollnow coined the term gerontology

and understood it as the “theory of education of the elderly” (Bollnow, 1962). American and European researchers devoted their works to a lesser extent to the health of older people and a greater extent to the factors influencing elderly learning. The American scientist David Peterson, in his article, described a model of Educational gerontology and launched a scientific journal with the same name (Peterson, 1980). He characterised his model of older adult education as a “field” with three key features: educational opportunities for interested individuals, public education about ageing, and the education of professionals and practitioners (Peterson, 1980; Volkova *et al.*, 2021). Educational gerontology became, for the next few decades, the main paradigm of older person education and was implemented as an important basis for further research. This model was developed with Frank Glendenning, David Battersby, and Michael Formosa. For three decades, scientists from the USA and Europe discussed the advisability and priority of the use of the terms Gerontology and Educational gerontology (Glendenning, 1989; Lemieux *et al.*, 2000). Some researchers considered that the field of elderly learning should be categorised into five models: Educational Gerontology, Gerontology, Geragogy, and integral permanent education (Kern, 2018). Thus, in German works, the term Gerontology or even Geragogy can be found, whereas in English papers, educational gerontology is used. The French scientist Philippe Carre, in his work, presented educational gerontology as an international science (Carre, 1981). The scientist believed that the goal of lifelong education is inclusion, ensuring that learning opportunities are available to everyone who wishes to pursue education (Carre, 1981). Additionally, in the study of P. Carre and A. Lemieux, the differences between education for young people and education for older adults were discussed, including whether elderly education should be separated. Furthermore, they argued about the differences in the aims and goals between pedagogy, andragogy, and gerontology (Carre, 1981; Lemieux *et al.*, 2000; Formosa, 2017). The scientist Dominique Kern analysed nine models of older adult education from seven different countries and three continents (North America, Europe, and Australia) and focused on the differences between older adult education and education for younger people (Kern, 2018). The article by the scientist Molly Andrews presents an alternative model for examining social activism as a lifelong engagement, particularly in lifelong education (Andrew, 2017). Some researchers have found that educational gerontology promotes emancipatory learning and social change (Hachem *et al.*, 2017). Additionally, recent researcher L. Tett (2023) has demonstrated the specific impact of lifelong learning on mental ill health; moreover, an approach based on the resources and skills within communities and individuals is effective because it promotes resilience that maintains and sustains health. The advantages of lifelong learning for the mental health of elderly persons have been conducted by M. Formosa, D. Kern, S. Webb, and Y. Zhang. Thus, socialisation and links in an educational environment form experiences in

which learners maximise their involvement and learning. Furthermore, taken together, the concepts of learner involvement and positive psychology may have direct implications for building psychological well-being for learners, which can help in overcoming the multiplicity of challenges the elderly learner confronts (Beattie, 2022). Another group of scientists in their research pays attention to personal development as a priority. The life circumstances of older adults, such as having fewer responsibilities, may mean that economic and educational advancement are not their main priorities, with personal growth often being the most significant outcome of their participation (Babb *et al.*, 2021). Sometimes, however, participants prioritise employment outcomes above the elderly learner’s own goals (Allat & Tett, 2019). The Ukrainian scientist O. Anischenko, (2021) considers that among the most common fields those that have linguistic, psychological, health, information and communication, legal, economic, artistic, and other directions can be distinguished. This study, as well as previous ones, identifies the most common fields of educational gerontology, such as digital technology, engineering and infrastructure, agriculture, language and culture, and logistics and supply. Furthermore, this article identifies the main reasons for the necessity of developing educational gerontology during the full-scale military invasion in Ukraine, such as decreasing stress levels, supporting mental health, and ensuring the assistance of the country’s economy by attracting and encouraging elderly persons to the labour market.

The obtained research results regarding the necessity of developing well-established systems of educational gerontology or adult education in Ukraine to provide support for the psychological well-being of seniors, and for the country’s economic assurance. Furthermore, taking into consideration the large number of refugees from Ukraine growing every six months, there is a need to create international programmes for elderly people’s education support, offering a range of programmes and courses to help seniors further their education, develop new skills, become integrated into the socio-economic environment, and ensure psychological well-being assurance.

CONCLUSIONS

The main reasons for developing educational gerontology in Europe and the USA are to provide opportunities for lifelong learning and skill development for persons who did not have the opportunity to complete their education earlier in life or who aspire to advance their careers. In addition, there are some additional reasons prompting people to join educational gerontology programmes, including loneliness, mental health support, and socialisation. Likewise, the same reasons exist for educational gerontology in Ukraine, such as providing elderly persons with the opportunity to continue their learning and development in addition to formal education, including the acquisition of new skills for personal and professional advancement, improving job prospects, or even pursuing intellectual interests.

Furthermore, the study also identified additional grounds for the increasing necessity of educational gerontology in Ukraine after the full-scale military invasion of Russia. Among these additional reasons are the consequences of Ukraine. This situation has created a shortage of specialists in various fields, such as healthcare, engineering and infrastructure, digital technology, education, agriculture, and logistics and supply. Such circumstances require the development of innovative strategies for addressing the educational, health, and social needs of elderly persons as the main supporters of the Ukrainian economy and labour

market. The direction of further research can be used in creating healthcare and rehabilitation programmes, as well as workplace training and skills development programmes.

ACKNOWLEDGEMENTS

None.

CONFLICT OF INTEREST

The authors declare that no potential conflict of interest may affect the objectivity or results of the research presented in this study.

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Світлана Лехніцька

Кандидат філологічних наук
Національний медичний університет імені О.О. Богомольця
01601, бульв. Тараса Шевченка, 13, м. Київ, Україна
<https://orcid.org/0000-0002-9178-7069>

Іванна Саханда

Кандидат фармацевтичних наук
Національний медичний університет імені О.О. Богомольця
01601, бульв. Тараса Шевченка, 13, м. Київ, Україна
<https://orcid.org/0000-0003-4171-5160>

Розвиток освітньої геронтології в Україні в умовах воєнного стану

Анотація. Повномасштабне військове вторгнення країни-агресора РФ в Україну призвело до мобілізації громадян України призовного віку та спричинило скорочення на ринку праці спеціалістів молодого та середнього віку. З метою підтримки ринку праці та економіки України виникла необхідність у залучення людей похилого віку до освітньої системи. Тому основною метою статті було визначення особливостей розвитку освітньої геронтології під час повномасштабного військового вторгнення в Україну. Дані дослідження були оцінені за допомогою кількісних і якісних методів, включаючи анкетування, спостереження, аналіз даних і документів. Індивідуальне опитування було організовано протягом 2020-2022 та 2022-2024 років шляхом листування, гугл-форми, паперової анкети. Дослідження основних галузей освітньої геронтології, які обирають люди похилого віку виявило такі: цифрові технології, управління, охорона здоров'я та благополуччя, мова та культура, культура і мистецтво, інженерія та інфраструктура, сільське господарство, логістика та постачання. Дослідники освітньої геронтології США та країн Європи (включно з Україною до лютого 2022 року) з'ясували основні причини необхідності розвитку інклюзії літньої людини в освітній процес, а саме: самотність, підтримка психічного здоров'я, соціалізація. Після лютого 2022 року до основних причин необхідності залучення людей похилого віку до навчального процесу додався дефіцит спеціалістів у різних галузях економіки країни внаслідок мобілізації громадян молодого та середнього віку до Збройних Сил України, численні трагічні загибелі внаслідок бомбардування українських міст і сіл, відтік людських ресурсів за кордон. Ці обставини вимагають розробки стратегій навчання дорослих та мережі освітніх геронтологічних інститутів, які сприятимуть забезпеченню підтримки психічного здоров'я людей похилого віку та їх включенню в соціально-економічне середовище

Ключові слова: освіта дорослих; цифрова освіта; мобілізація; відтік людських ресурсів; стратегії навчання; підтримка економіки країни

UDC 372.2.091.313 :316.46
 DOI: 10.52534/msu-pp3.2024.29

Galyna Vatamaniuk*

PhD in Pedagogy, Associate Professor
 Kamianets-Podilskyi National Ivan Ohiienko University
 32300, 62 Ohiienko Str., Kamianets-Podilskyi, Ukraine
<https://orcid.org/0000-0002-4236-107X>

Tetiana Dutkevych

PhD in Pedagogy, Professor
 Kamianets-Podilskyi National Ivan Ohiienko University
 32300, 62 Ohiienko Str., Kamianets-Podilskyi, Ukraine
<https://orcid.org/0000-0003-3792-7195>

Project-based learning as a means of forming leadership qualities in senior preschool children

Article's History:

Received: 13.05.2024
 Revised: 25.08.2024
 Accepted: 25.09.2024

Suggested Citation:

Vatamaniuk, G., & Dutkevych, T. (2024). Project-based learning as a means of forming leadership qualities in senior preschool children. *Scientific Bulletin of Mukachevo State University. Series "Pedagogy and Psychology"*, 10(3), 29-39. doi: 10.52534/msu-pp3.2024.29.

Abstract. The relevance of this research is determined by the modern demands of Ukrainian society for the formation of motivated, responsible citizens who can successfully fulfil leadership roles. The aim of the study was to find an answer to the question of how project-based learning contributes to the development of leadership qualities in older preschool children. The research employed structural-functional, terminological, humanistic, genetic, activity-functional, and competency-based approaches, as well as general scientific logical methods (analysis, the unity of induction and deduction, modelling, and systematisation). Leadership qualities (independence, initiative, creativity, responsibility, communicativeness, organisational skills, partnership, empathy) were defined as components of leadership as a child's social competence. It is shown that project-based learning involves the organisation of children's activities to create a project, which is based on the need to solve a life problem, achieve a certain goal, to obtain a specific result through the sequential solution of current tasks. Project-based learning aligns with the demands of the modern age, expanding the space for children's creativity, stimulating thinking, boosting motivation, and enabling educators and children to be partners, avoiding displays of dominance. Project-based learning successfully fosters leadership qualities such as communicativeness, organisational skills, partnership, and empathy in senior preschool children, as it is built on group interaction with its inherent phenomena of role distribution, communication, and mutual understanding. By modelling the process of solving real-life problems during the project, children develop leadership qualities such as independence, initiative, creativity, and responsibility. The specific capabilities of project-based learning in developing leadership qualities lie in providing opportunities for children to exhibit leadership qualities in interactions with both peers and adults; fostering various types of leadership (communicative and business, formal and informal, etc.) and the acquisition of different leadership roles (organiser, expert, idea generator, communicator); and preventing "negative" leader traits such as arrogance, dominance, and egocentrism

Keywords: personality; leadership; senior preschooler; educational project; cooperation; educator

*Corresponding author



INTRODUCTION

Developing socially active citizens is one of the primary goals of modern society, a crucial issue in education at all ages, including the preschool years. Preschool children are at a stage of intensive development, laying the foundation for their personality, and developing life skills that will remain important in adulthood. The direction and intensity of a child's activity in childhood determine what the child absorbs from their environment, what their personal qualities will be in the future, and their ability to interact with others and achieve success in life, even in the most challenging situations, thanks to their adaptability, flexibility, resourcefulness, decisiveness, and creativity. Therefore, fostering leadership qualities in children, such as responsibility, independence, initiative, and the ability to effectively communicate and interact with society, is a pressing challenge for modern preschool education.

In the Basic Component of Preschool Education, a child's interactions with their environment (social, material, and natural) are considered crucial factors in the development of personal competence. It emphasises that children's happiness and positive outlook are fostered through cooperation and friendly relationships between children and adults (Order of the Ministry of..., 2021). Children gain life experience through communication and interaction in various social groups (family, preschool group, neighbourhood playgroups, etc.), where they learn typical group roles, values, and norms of behaviour, and they learn to both meet group expectations and influence the group.

Leadership is a crucial socially oriented personal competence, the ability to unite people, motivate them towards a common goal, and overcome obstacles along the way. Research suggests that leadership is a phenomenon of social groups and is determined by the group's perception of one of its members as a leader. The group assigns the leader a formal or informal role, the fulfilment of which is designed to contribute to achieving a common goal (Nestulya *et al.*, 2020). From a psychological perspective, the concept of leadership only makes sense in the context of interpersonal relationships and reflects the presence in the leader of those personal qualities that correspond to group values. A leader is a group member who is respected and trusted by others and is entrusted with defining group goals and making decisions on behalf of everyone. Thus, the leader sets the direction for group activity, which simultaneously corresponds to group norms and values (Vynoslavskaja & Kononets, 2021). Various types of leadership are noted, and the importance of developing a variant that increases the effectiveness of group activity is emphasised (Fouraki *et al.*, 2020). From a pedagogical perspective, the leader is a motivator and a bearer of organisational abilities, thanks to which the group acquires integrity and cohesion in its activity to achieve a set goal (Voronov, 2021).

Although different social groups have leaders with varying qualities, numerous studies have enabled the generalisation of certain personality traits that allow individuals to assume leadership positions. For instance, it has

been found that leaders must be able to influence people, improve group morale, and introduce innovations (Deligiannidou *et al.*, 2020); be authentic, humble, possess organisational skills, be communicative, and empathetic (Ganske & Carbon, 2023). A crucial leadership quality is the ability to respond sensitively to the emotional states of others in communication and to consider the emotional context of social interaction in their behaviour. Leaders build relationships and solve problems, are resilient and persistent in difficult situations, and know when, how, and whom to turn to for help. However, leaders also exhibit negative qualities such as manipulation, narcissism, reduced empathy, and aggression, which can gradually weaken an individual's leadership position within a group (Vadvilavičius & Stelmokienė, 2019).

Leadership is not an innate ability possessed only by certain children; leadership qualities can be developed in every child by creating the appropriate conditions and using specially selected methods. Important leadership qualities in children include activity, responsibility, initiative, and emotional resilience. A preschool leader is an initiative-taking, engaged, and creatively oriented individual who inspires their peers through their example, encouraging imitation and collaboration in engaging activities (Voronov, 2021).

Contemporary preschool education programmes emphasise that the development of social skills is a crucial aspect of a child's upbringing, aimed at ensuring that children acquire moral and value-based guidelines for their behaviour and relationships with others. This includes gaining skills for emotionally positive interactions and relationships, as well as etiquette habits, and learning various social roles, including leadership roles (Kononko, 2019). In a relatively stable group of children, as in any stable social group, processes of structuring and hierarchisation occur. Selectivity in relationships among senior preschoolers can be observed, resulting in the formation of stable micro-groups (3-5 members) consisting of children who play together for extended periods. Among their peers, children distinguish friends with whom they interact most willingly and frequently, and those with whom they prefer not to interact. Groups of senior preschoolers are quite structured, with the emergence of group status and hierarchy (Pirozhenko, 2019). Moreover, a child's group status influences their interactions with peers and, consequently, becomes a significant factor in their personal development. A child with high status finds it easier to assume leadership roles within a peer group, as they become an attractive object of imitation for others. Conversely, a low interpersonal status adversely affects the formation of a child's personality, alienating them from their peers and hindering their acceptance into group activities. Therefore, it is essential to ensure that a child's group status is dynamic, meaning that the child has the opportunity to fulfil both leadership and follower roles. The aforementioned considerations provide grounds for the assertion that the leadership position of a senior preschooler is a crucial and indispensable factor in

their personal development. Consequently, educators must create favourable psychological and pedagogical conditions and employ effective methods to increase a child's interpersonal status, so that they have the opportunity to assume a leadership role in various communicative situations.

The foundational approaches for implementing tasks aimed at developing leadership qualities in preschool children are activity-based and competence-oriented methods. The combination of these approaches allows for the implementation of a project-based model of organising the educational process. As T.L. Gurkovska & L.I. Solovyova (2023) note, contemporary preschool practice involves a more active involvement of families in the educational process, providing opportunities to develop preschoolers' leadership qualities in social contexts of interaction between representatives of different age groups (children, educators, parents). Given that leadership qualities are formed through communication and interaction, alongside the need for greater family involvement in children's upbringing, it can be anticipated that project-based methods are the most suitable tools for addressing these objectives. However, the issue of using project-based learning to develop leadership qualities in senior preschoolers remains unexplored in contemporary psychological and pedagogical science, which has motivated the authors to conduct this research. The aim of this article was to highlight the specific features of applying project-based learning in developing leadership qualities in senior preschool children. The objectives of the article were as follows:

1. To substantiate the appropriateness of employing project technology as an effective means of developing leadership qualities in senior preschoolers;
2. To reveal the key properties of project technology that enable it to serve as a tool for fostering leadership qualities in senior preschool children;
3. To identify the specific impact of project-based learning on the formation of leadership qualities in senior preschoolers.

MATERIALS AND METHODS

The study of the features of developing leadership qualities in senior preschool children through project-based learning relied on the application of scientific-methodological approaches and research methods. A structural-functional approach was used to organise the research, defining its relevance, objectives, tasks, key concepts, and stages. The research problem was structured into separate components – such as identifying the essence of leadership, its manifestations in children, and analysing the specific features of project-based learning that allow for the development of children's leadership qualities. A terminological approach was used to illuminate the concepts of project-based learning, leadership, and its qualities in children. The main interpretations of the concepts were considered, and their authorial versions were provided. A humanistic approach is an axiom in conducting psychological and

pedagogical research. It manifests as human-centredness and child-centredness. To study it in more detail and apply it effectively, the studies of H.V. Belenka *et al.* (2016) and T.O. Pirozhenko (2019) were used.

A humanistic approach was implemented to determine the value orientation of developing leadership qualities in preschoolers, focusing on positive leadership qualities defined as those that contribute to the personal development of the leader's followers. In the research process, following the genetic approach, the age characteristics of senior preschoolers and the specific nature of their manifestations of leadership were taken into account, particularly in play, during educational activities, and in formal and informal communication with various partners (adults and children). The activity-functional approach enabled the interpretation of project-based learning as one of the means of engaging children in group activities, which inherently involve the assumption of leadership roles. In the context of the competency-based approach, the authors defined the leadership qualities of a senior preschooler as a combination of value-motivational, knowledge, and behavioural components that determine the child's ability to perform leadership roles during communication and cooperation.

General scientific logical methods were employed, including analysis (identifying the essential features of project-based learning, the main leadership qualities and roles of senior preschoolers), the unity of induction and deduction (providing examples, facts, and their generalisation to conclude), modelling (imagining the impact of project-based learning on the development of leadership qualities in various types of children's activities), and systematisation (revealing the connections between the phenomena under study, the mechanisms by which project-based learning influences the development of leadership qualities). The observation was used as an empirical method, which allowed for consideration of the age characteristics of preschoolers and is widely used in psychological and pedagogical research. During observation, children behaved freely, were trusting towards the researcher, and were eager to communicate with them. The observation method was used to identify the impact of specific situations of using project-based learning on the development of leadership qualities in preschoolers. The purpose of the observation was to identify those aspects of project-based learning that provide favourable conditions for the distribution of group roles into leaders and followers, the flexible change of leadership roles, as well as leadership and follower roles among children, and the involvement of different age-sex categories in children's partner interaction during project implementation.

RESULTS AND DISCUSSION

The challenges of implementing project-based learning in preschool education are reflected in scholarly and methodological works, where researchers express various opinions on the essence of the concept of "project"

(Linnyck, 2020; Kozak, 2022; Teslenko, 2022). Generalising different approaches, it can be noted that project-based learning is fundamentally based on organising children's activities to create a project, as a phenomenon that involves a conscious, meaningful desire of its performers to solve a specific life problem, achieve a certain goal, and obtain a concrete result through the sequential solution of current tasks. An educational project is a creative, initiative, motivated, and relevant self-activity for children, their specific practical-creative activity, and a step-by-step movement towards achieving a goal. Project-based learning meets the demands of the time, as it expands the space for children's creativity, activates thinking, strengthens motivation, and provides teachers and children with the opportunity to be partners, avoiding manifestations of dominance, superiority, and pressure (Kozak & Korol, 2019). Senior preschoolers strive for communication and interaction with their peers, understand and highly appreciate the opportunities for partner cooperation with them (Karabaieva, 2019). A partnership among senior preschoolers in project activities determines children's communication and cooperation based on equality, mutual respect, and mutual acceptance, which are based on the readiness of each participant to listen to and support each other. This allows the teacher to practically implement the humanistic values of early childhood education, in particular, the idea that each child is a valuable individual with individual experience of getting to know and mastering the environment. Working on a project allows its performers to develop informational, research, and communicative competencies, the ability to self-learn and effectively use knowledge in practice (Kulalaieva *et al.*, 2020).

Uniting children through shared interests and goals in the process of completing a project generates collective experiences that foster goodwill, tolerance, and empathy in their relationships with each other. A sense of "team spirit" is born in the child, which becomes the foundation of emotional intelligence, cohesion, and civic-mindedness. In the process of communication and interaction with peers, a child has the opportunity to engage in various types of children's activities, under the influence of which they experience intellectual (interest, surprise, doubt, joy, curiosity, a sense of the new) and moral (respect, support, understanding, sympathy) experiences. Children encounter obstacles and challenges in achieving the project's objectives together, which aids them in successfully overcoming difficulties and experiencing the joy of success, even in what may seem like a "childish" but nonetheless significant undertaking for them (Vyzhva, 2020; Kotyk *et al.*, 2021).

Therefore, project-based learning is an effective tool for organising children's partnerships based on equality, mutual assistance, and mutual respect, which are manifested in the process of solving a problem that is significant and emotionally attractive to children. Project-based learning, as a way for preschoolers to acquire important social roles, becomes a priority for ensuring children's success, rejecting the discriminatory division of them into categories and levels. Only such an approach allows the formation of a

dynamic system of social roles of a leader and their follower in preschoolers. Project-based learning involves working on a project as a joint endeavour for children, aimed at solving an interesting and significant problem for them. The implementation of a project has a certain structure, which is determined by the logic of the problem-solving process and includes defining the goal and objectives, stages (plan) of their implementation, discussing options for solving the problem, choosing the most successful option, implementing the chosen method using certain methods and techniques, and evaluating the results obtained, correlating them with the planned ones. During the discussion of the most successful ways to solve the problem, children learn to consider such aspects as economic feasibility, realism, availability of resources, duration of implementation, and so on. Thus, in project-based activities, children need to independently determine the goal, the steps to achieve it through the completion of several sequential tasks, and find adequate forms, methods, and techniques for their implementation (Teslenko, 2022). Children's activity is creative, exploratory, independent, and initiative-based, and is carried out in a group form.

This technology allows for the modelling of the creative process, the essence of which is the search and cognitive activity of children with its inherent ambiguity and multivariance, which gives everyone space to express their ideas on ways to solve the problem, activates children's mental activity, group discussions, debates, and a careful yet critical attitude towards each other's proposals. Working on a project, children gain experience in research work, learn to independently answer questions, and acquire the knowledge they need to navigate their environment. They are not consumers but creators who independently determine their goals, seek ways to achieve them and obtain real socially useful results. Therefore, the project method should be considered a certain research technology that allows the teacher to organise children's cognition of the world and gives the child the opportunity to feel like an active and responsible actor, a transformer of the world.

Project-based activities in preschool education institutions take the form of teamwork among children, where each participant plays their role, and only combined action ensures a shared result, revealing to each child the importance of their participation for others. Communication among children plays a crucial role in this work, as it develops their communicative skills, which form the foundation of basic leadership qualities (the ability to negotiate, accept or reject others' opinions, the ability to respond to others' suggestions, evaluate and control each other, coordinate and harmonise their actions). If, in individual work, a child may give up in the face of difficulties, in a team they are helped by others, who together can solve much larger and more complex tasks (Yehorova, 2021; Rashid, 2022). Throughout the project, the significance of not only the collective result but also the individual contributions of each participant becomes evident. This dynamic allows for the flexible shifting of group roles, enabling a child to function

as a leader or follower, an initiator or executor, depending on the context and needs of the project.

Preschool education practice has accumulated various options for using project-based learning, which differ in scale, content, social significance, duration of projects, as well as the quantitative, age, and sex composition of the groups of “projectors” and the nature of adult participation in the implementation of children’s projects. Projects are implemented in two main forms: either as a teacher’s project activity or as a methodology for a teacher to manage children’s project work. Projects are typically implemented in two main forms: either as the educator’s own project work or as a method for managing children’s project activities. Educational challenges serve as the basis for the educator’s project, through which they seek effective ways to improve their work with children. The educator’s project is seen as an innovative endeavour aimed at mastering new and effective teaching technologies, methods, and techniques. The educator’s efforts to enhance the educational process must be creative, as this directly influences the creativity of the children they teach. An educator’s project activity contributes to the organised, planned, and at the same time operational solution of their professional problems, in particular, those related to modern challenges regarding the education of children from internally displaced families, early support for children in difficult life situations, the implementation of innovative technologies and methods of preschool education, the systematic updating of didactic materials, etc. In turn, children’s project work as one of the innovative technologies of preschool education can be an object in an educator’s project, which involves mastering the corresponding competencies ((Boyatzis *et al.*, 2019; Yehorova, 2021).

Project-based learning is geared towards a new style of educational work for educators with children. It allows not only preschoolers but also adults, primarily educators and parents, to be united into teams. The educator teaches children to work on a project, but does so indirectly through the organisation of children’s search and cognitive interaction, skilfully managing which achieves a complex of significant developmental and educational results. A special interaction arises between the educator and the team of children working on the project. An important advantage of project-based learning is the humanistic and partnership position of the educator, who acts as an organiser, coordinator, and advisor, rather than a controller or mentor. The professional tasks of the educator are to interest children in the problem that the project is to solve, to create a certain intrigue, to direct the children’s efforts towards expressing ideas, searching for answers, and implementing their ideas. Any problem does not have predetermined ways of solving it but requires searching for and constructing them. In other words, project-based work creates conditions for finding various ways to solve a given problem and creating a planned final product in a meaningful and rich interaction between children with each other and with the educator. The children’s goal is to find answers, create a final product, and pose new problems. The atmosphere of shared interest adds

a positive emotional tone to the relationships within the group, fostering cooperation and encouraging the children to be attentive to one another. At the same time, the educator must plan the children’s work in advance, find that children’s activity that will be interesting and meaningful, and which can unite the efforts of participants in its implementation. Developing a project is a creative endeavour not only for children, but also requires the psychological, pedagogical, and methodological skills of the educator, their innovative and research activity in the interests of improving the quality of the educational process. Children’s project-based learning work becomes a subject of professional analysis of its effectiveness and shortcomings for the educator, which serves as a basis for further improvement of the method.

The scale of project-based learning varies in terms of the complexity of tasks, and the number of stages of their implementation, which determines the duration of children’s work on a particular project. Short-term projects are designed for one lesson or one day, while long-term projects can take several weeks. There are so-called mega-projects, work on which is particularly large-scale, involving a significant number of performers (several children’s groups, parental involvement, etc.). For example, the project “Seasons in Our Park” requires multiple stages of work throughout the calendar year, which allows children to observe changes in the park’s nature and take care of its order. Each stage is completed with a summary in the form of a photo exhibition, the production and subsequent presentation of crafts from natural materials, the arrangement of nature corners in the children’s group room according to the seasons, etc. In large group projects, conditions are created for the interaction of a significant number of performers, of different ages and experiences, and for a child, the opportunity arises to learn new ways of behaviour, to flexibly change them depending on the individual characteristics of partners, which significantly expands the repertoire of their soft skills, as important leadership qualities (Gurkovska & Solovyova, 2023). In some cases, so-called micro-projects are used, when project work is carried out in families together with children’s parents. This could be the preparation of a poster (a poem, an appliqué, or embroidery) on an interesting and important topic for children.

The conditions for the successful implementation of project-based learning apply to both children and the educator. The inclusion of preschoolers in project-based learning involves adhering to such pedagogical conditions as taking into account the desires and experience of its performers; understanding the problem and its acceptance by children as an interesting task; the availability of informational and material resources; interaction and cooperation between the educator and children; the freedom of children to express their own opinions, in choosing ways to solve the problem; and the playful nature of project work. From the educator’s side, important conditions are mastery of the project method, constant contact with the children’s group, friendly and interested support for children’s initiative, which gives space for their self-expression; a creative

approach to preparing tasks for project work that meet the requirements of problematic nature, innovation, ensure children's openness to the new, and form a need for knowledge and mastery of the environment (Kozak, 2022).

The implementation of project-based learning involves adhering to certain didactic principles, among which the leading role is played by such fundamental conditions as activity (children's interested perception of the project problem, readiness to solve it); productivity (the pragmatic orientation of solving the problem in order to obtain a subjectively or socially valuable result); technological nature (the sequential solution of a number of tasks in the process of solving the problem, each completed task serves as a basis for the next); openness to the new (creation of a communicative-cognitive environment conducive to both achieving the goal and initiating new projects); reliance on the subject's experience of children (taking into account the cognitive, creative, and motor-sensory abilities of the child, in accordance with age and individual life path; ensuring the playful nature of tasks); the connection of project tasks with significant problems of the present (a creative-research attitude of children to the environment); cooperation and partnership (group form of project implementation, distribution and coordination of work areas, combination of individual and collective) (Linnyck, 2020).

The unique social dynamics within a group of preschool children engaged in a project provide a nurturing environment for the development of key leadership qualities. The collaborative partnerships inherent in this interaction foster a dynamic shift between the roles of leader and follower. Each child has the opportunity to express their thoughts, suggestions, and ideas, which are then discussed, accepted, or rejected by their peers. Through this process, children develop and demonstrate essential leadership attributes such as assertiveness, independence, and initiative. The pedagogical potential of project-based learning in fostering children's leadership is defined by a range of inherent educational functions, namely: didactic, developmental, cognitive, and affective. The didactic function involves developing children's ability to independently acquire new knowledge and apply it to various areas of life such as social, domestic, natural, health, and aesthetic spheres; and cultivating the skill of explaining and defending their viewpoints in discussions with peers. The cognitive function entails enhancing children's motivation to learn; refining cognitive processes like attention, memory, thinking, speech, and imagination; fostering the ability to critically evaluate statements, opinions, and ideas; and developing higher-order thinking skills such as analysis, synthesis, comparison, generalisation, and classification. The developmental function pertains to the child as an individual, focusing on their self-regulation (the ability to manage emotions and willpower and overcome challenges), and their abilities (creative, investigative, communicative-organisational etc.).

As a result of participating in project-based activities, preschool children gain experience in taking on leadership roles in situations that require each child to demonstrate

responsibility, independence in achieving set goals, and initiative in determining methods of action. They also learn perseverance, attentiveness, and sensitivity towards the behaviour of their peers, as well as the ability to collaboratively overcome challenges and obstacles while negotiating and coordinating their actions. Furthermore, they develop the capacity to evaluate their own actions and those of other participants in the project appropriately. New opportunities for developing children's leadership skills arise from involving parents, administrators, and sometimes community members in children's project-based activities, thereby expanding and enriching their collaboration. Preschoolers involved in project-based activities develop leadership qualities through partnerships and collaboration among all educational stakeholders, which is underpinned by principles such as: prioritising supportive and motivating interactions (where the focus in teamwork is on inclusion rather than achievement); fostering mutual exchange of knowledge, skills, and abilities among children (where individual experiences become collective assets); and partially delegating authority to children (Romanovskiy & Ponomaryov, 2019; Voronov, 2021).

Developing leadership skills through project-based learning requires a specific pedagogical approach that encourages each child to express their unique individuality, initiative, and autonomy. Educators guiding children's project work should focus on implementing humanistic principles of respect and love for the child, where adults gently and carefully support children in self-expression, discovery, and creativity. Educators face unique challenges, such as guiding rather than dictating, accompanying rather than instructing, and stimulating rather than evaluating. To maximise the development of leadership qualities through project-based learning, educators must embrace children's enthusiasm and the bustling atmosphere in the group as positive signs of engagement. This includes their eagerness to find solutions, their willingness to express their thoughts and ideas, their debates, their frustrations with setbacks, and their joy in their successes. The organisation of project-based activities requires the active participation of each child, who should engage willingly, demonstrate initiative, and feel their significance. Educators should foster children's independence, involve their families in the project to promote positive parent-child interactions and family engagement and act as supportive mentors in sourcing resources. They should encourage children's creativity and initiative, tolerate mistakes as learning opportunities, celebrate successes, and provide emotional support. Educators should demonstrate a consistently positive attitude, encourage imaginative thinking, and be sensitive to children's emotional needs while fostering collaboration and communication among peers.

Project-based learning for preschool children, with direct adult involvement and support, is focused on solving problems through a sequence of interconnected stages. The goal-setting stage begins with the educator presenting a problem to the children or, in some cases, creating

conditions for children to independently identify a problem as an obstacle to achieving a desired outcome. Children should be motivated to solve the problem as this will stimulate goal setting and encourage them to think critically and offer suggestions. Senior preschoolers are often motivated when the problem is linked to play or when it aligns with their ethical or moral values (e.g., wanting to please a parent or make a gift for a friend). The next stage involves planning the work, determining the sequence of tasks and the conditions for their completion. To stimulate children's problem-solving, educators can brainstorm ideas and suggestions with the children and assist in finding information and resources. The core of project-based work is implementing ideas to solve the problem, with the educator providing differentiated support. The process concludes with comparing the actual outcome to the planned one, encouraging children to reflect on their successes and failures, and discussing future project possibilities. Throughout the project, educators should maintain emotional connections with children, showing genuine interest and support for their efforts, and helping them overcome challenges (Olynyk, 2019; Teslenko, 2022).

Project-based learning offers children an active and creative approach to exploring their environment, fostering an understanding of its interconnectedness. It also highlights the role of knowledge and information in navigating the world through various activities. Each project typically involves a complex range of activities, with one or more types of activity predominating. For example, the development of leadership skills through the program "A Leader Lives in Everyone" (Voronov, 2021) occurs within activities typical of the preschool age, such as communication, cognition, play, exploration, and creative expression. The program assesses leadership development in preschoolers using three criteria: the desire for a leadership position within the peer group (motivation), teamwork and communication skills, and fundamental leadership qualities. Each criterion has specific indicators within different types of child activities. For instance, in *communicative* activities, a child strives for a leadership role among peers by engaging, persuading, and encouraging others to participate in joint activities, as well as presenting their own and shared achievements. They constructively interact within the team by negotiating, seeking help, reconciling, apologising, assisting, forgiving, empathising, providing support, and responding appropriately to the emotional expressions of others. Additionally, they demonstrate leadership qualities such as initiative, confidence, and resourcefulness. During *cognitive* activities, a child expresses joy in their own discoveries and holds authority among peers due to their knowledge across various domains, desiring to share what they have learned with others. They demonstrate motivation for exploration and derive pleasure from their understanding; they organise their peers into games, act actively and persuasively in research, and confidently apply their acquired knowledge in their activities. Furthermore, they exhibit fundamental qualities such

as initiative, creativity, determination, and observance. In *play* activities, a preschooler strives to be at the centre of joint planning and discussion regarding the forthcoming game, including its narrative arc. They seek to lead a group of children in selecting game attributes, assigning roles, and setting up the play environment. Senior preschoolers aim to negotiate the content, plot, role distribution, and dynamics of the game's development, including the use of substitutes and props. A child's leadership is manifested not only in their ability to propose the game's storyline and role allocation but also in their capacity to organise the game even when conceding the opportunity to perform the most appealing role. In the play, the child exhibits essential leadership qualities such as responsibility, initiative, perseverance, ingenuity, empathy, and a desire to excel.

In *research and exploratory activities*, the child initiates the creation of an idea and its implementation through transformative actions, following the natural purpose of the object. They propose suggestions during group discussions about the task and create simple diagrams or symbols based on this information. The child shows readiness to participate in research and exploratory activities and invites others to join, offering to explain the meaning of the task set by the educator. They engage in group discussions about the task and strive to be the first to collaboratively analyse a straightforward diagram or plan for task execution. The child performs investigative tasks in pairs, threes, or teams, coordinating their actions with others, suggesting various ways to expand the task, and distributing responsibilities among the children. They propose different methods for documenting results, such as drawings, photographs, or video materials, and can assess the complexity of tasks, foresee rational approaches for their execution, and develop a clear algorithm of actions, while responsibly selecting the necessary equipment. They exhibit fundamental qualities such as initiative, interest, perseverance, resourcefulness, and persuasiveness.

The manifestation of leadership in *artistic and aesthetic activities* is characterised by a creative approach to the conception and execution of artistic endeavours by the intended idea and the natural purpose of the object. This includes the generation of ideas and inspiring peers with a desire to realise them, as well as demonstrating effective communication skills and the ability to speak persuasively while actively listening to others. The child leader exhibits co-creation with their peers during the dramatization of works, the invention of storylines, and the selection of the theatre for their performances. They strive for collaborative participation in singing, dancing, drawing, sculpting, and role-playing, aligning their interests with the desires of other children during collective artistic creation and celebrating the shared outcome. Furthermore, they display fundamental leadership qualities, such as an accurate assessment of their own achievements, kindness in interactions, a determination to achieve goals and creativity.

Project-based learning provides opportunities for the development of a variety of leadership roles, such as idea

generator, expert, organiser, and communicator. When confronted with a problem that requires a solution, children are encouraged to share their ideas and suggestions. A child becomes a leader at this stage if they can generate a significant number of ideas that interest others. The leader as an expert is characterised by their willingness and ability to evaluate these suggestions critically, identify their strengths and weaknesses and share their insights with the group. An expert possesses not only the necessary knowledge and skills to understand, analyse, and define the problem but also the ability to evaluate their peers' ideas and suggest improvements. The leader as an organiser is responsible for uniting the project team, assigning roles, facilitating collaborative planning, and ensuring that the work is carried out in the most effective sequence. The leader as a communicator fosters a positive group atmosphere, provides encouragement and support, and maintains emotional resilience in the face of setbacks and challenges. They inspire confidence in others and help to alleviate anxiety and negative emotions.

The socio-psychological mechanisms driving the development of leadership potential in preschoolers through project-based learning include trust, motivation, freedom of choice, and a sense of purpose for all participants in the educational process. A mutual sense of trust between adults and children fosters daily opportunities for motivated and active engagement in various learning experiences, promoting responsible independence. By granting children freedom of choice in terms of content, methods, resources, and context, a sustained interest, active participation, and a sense of purpose are cultivated. Such an approach is highly conducive to the growth of individual leadership potential in preschoolers. While a clear leader may not always emerge in a group project, every child exhibits leadership qualities. This is facilitated by the personal qualities of "sub-leaders". In some cases, educators may aim to develop leadership skills in specific children. Priority forms and methods in project-based learning for developing leadership qualities in senior preschool children include integrated activities using interactive teaching methods, dialogues, self-presentations, strategic games, collaborative task completion, and preliminary group discussions of goals and plans. Other effective methods include problem-solving discussions, research-based games, group intellectual games with competitive elements, collective creation of educational stories and projects, team games with elements of competition and self-organisation, sports events and recreational activities, theatrical performances, collective storytelling for game projects, collaborative creative activities, self-organised team quests, role-playing and intellectual games with competitive elements, taking turns, collaborative work, joint completion of tasks, modelling the structure of the work process through various activities, experiments, observations, and problem-solving tasks with prior group discussions of solutions. All of these methods can be implemented independently or within the context of larger projects. Their diversity ensures that each child finds their place

within the child-adult community, creating exceptional opportunities for the development of leadership qualities.

The themes of educational projects can vary widely, such as "Museum of Our Homeland", "Autumn in My Town", "How a Book is Made", "Vitamins: Our Helpers", "Christmas Decoration Factory", "Our Playground", and many more. The leadership potential of these projects depends on the set goals, the conditions created by adults for their implementation, consideration of children's age and interests, and the educator's readiness to foster leadership in the children's group. For example, one potential project is "Museum of Our Homeland". This project focuses on local history, is collaborative in nature, and is informational in its purpose. The goal of the project is to develop leadership roles such as expert, idea generator, and motivator. The project tasks involve developing children's cooperation skills, their ability to express and discuss various proposals, and their ability to unite and coordinate efforts to achieve a common goal. It also aims to foster aesthetic sensibilities and a desire to protect the local environment. Equipment and materials include stationery, videos, and local history books. The project's outcome is an exhibition of local history museum materials on the group's premises. Participants include children, parents, educators, and museum staff. The duration is 10 days. Preliminary work includes a visit to a local museum in the town or village. During the project, children are assigned different roles. A "museum director" takes on a leading role, assigning tasks to their "subordinates" (museum staff, specialists in flora and fauna, local history, and geography) whose goal is to prepare a new exhibition of museum exhibits about the nature, history, and geography of the local area. To achieve this, children engage with their parents at home, bringing in antique items, amulets, minerals, photos of local plants and animals, and interesting videos on electronic devices. A museum worker consults with children and educators as needed. The "museum director" ensures that each "employee" fulfils their assigned tasks, requiring them to interact with other "specialists", parents, and the educator. Over time, other children take on leadership roles, developing management skills through simulated situations such as the director being away, ill, or resigning. Upon completion of the research, a presentation is organised to showcase the project outcomes. With the help of adults, a new local history exhibition is set up in the group room or music room. Children from other groups and parents are invited. The "director" shares the history and purpose of the museum with the audience, highlighting the most active participants and those who made exceptional contributions. The "tour guides" then present the museum exhibits, explaining what the children have learned through the project.

While recognising the significant potential of project-based learning in developing leadership qualities among senior preschool children, it is important to acknowledge certain challenges in its implementation. Ensuring active participation from every child can often be hindered by uneven levels of communicative and linguistic

development among project participants, as well as differences in their personal experiences, which can impede effective communication and the identification of shared interests. Consequently, this can obstruct collaboration (Belenka *et al.*, 2016; Pirozhenko, 2019). At times, during the execution of a project, educators must address manifestations of so-called negative leadership qualities, particularly when a child seek to establish themselves as the dominant figure within their peer group. This can manifest as arrogance, disregard for others' opinions, aggression, or egocentrism. For such a leader, the essence of the project may become centred around subordinating other group members to themselves (or to their ideas), which contradicts the values of partnership. As a result, teamwork can devolve into interpersonal conflicts, struggles for dominance, and the establishment of hierarchical relationships, posing a significant threat to the effectiveness of project-based learning. This situation may arise because educators may find it convenient to have a consistent helper, but it is essential to ensure that all children have opportunities to contribute and explore various roles. In conclusion, project-based learning is well-suited to the developmental stage of senior preschool children and serves as an effective means of fostering essential leadership qualities. This occurs through the assumption of various leadership roles during the collaborative activities of children engaged in the creation and implementation of a project, which is a significant and socially valuable endeavour.

CONCLUSIONS

As a result of the conducted research, the authors concluded that project-based learning has significant educational potential, particularly in fostering the development of leadership qualities in senior preschool children through both personalised and communicative approaches. Project-based learning combines crucial educational factors such as the opportunity for each child to express their unique creativity, build a cohesive group, promote active

communication and interaction, encourage children to engage actively and responsibly with the world, overcome challenges, and develop the ability to think critically about non-standard situations (analysis, planning, and forecasting). The group-based nature of project-based learning fosters a collaborative environment characterised by role distribution, communication, mutual understanding, and cooperation, providing a favourable context for developing leadership qualities such as communicativeness, organisational skills, partnership, and empathy in senior preschool children.

By simulating real-world problem-solving, project-based learning fosters the development of essential leadership qualities such as independence, initiative, creativity, and responsibility in preschool children. The specific benefits of project-based learning for developing leadership skills include the involvement of individuals from different age groups (children, educators, and parents), allowing children to demonstrate leadership not only with their peers but also with adults; the diversity of forms and methods within project-based learning, which facilitates the development of various leadership styles (communicative and business, formal and informal) and the adoption of different leadership roles (such as organiser, expert, idea generator, and communicator); and the collaborative nature of projects, which helps prevent the emergence of negative leadership traits like arrogance, dominance, and egocentrism. Future research should focus on identifying the competencies required for educators to effectively implement project-based learning, as well as developing and testing specific methodologies for fostering leadership skills in senior preschoolers.

ACKNOWLEDGEMENTS

None.

CONFLICT OF INTEREST

None.

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Галина Ватаманюк

Кандидат педагогічних наук, доцент

Кам'янець-Подільський національний університет імені Івана Огієнка

32302, вул. Огієнка, 61, м. Кам'янець-Подільський, Україна

<https://orcid.org/0000-0002-4236-107X>

Тетяна Дуткевич

Кандидат психологічних наук, професор

Кам'янець-Подільський національний університет імені Івана Огієнка

32302, вул. Огієнка, 61, м. Кам'янець-Подільський, Україна

<https://orcid.org/0000-0003-3792-7195>

Проектна технологія як засіб формування лідерських якостей у дітей старшого дошкільного віку

Анотація. Актуальність дослідження зумовлена сучасними запитами українського суспільства на формування мотивованих, відповідальних громадян, що можуть успішно виконувати лідерські ролі. Метою роботи став пошук відповіді на питання про те, як за допомогою проектної технології відбувається формування лідерських якостей старших дошкільників. У дослідженні застосовано структурно-функціональний, термінологічний, гуманістичний, генетичний, діяльнісно-функціональний та компетентнісний підходи, а також загальнонаукові логічні методи (аналіз, єдність індукції та дедукції, моделювання, систематизація). Лідерські якості (самостійність, ініціативність, креативність, відповідальність, комунікабельність, організаторські вміння, партнерство, співчутливість) визначено складовими лідерства, як соціальної компетентності дитини. Показано, що проектна технологія передбачає організацію діяльності дітей зі створення проекту, в основі якого лежить потреба у вирішенні життєвої проблеми, у досягненні певної цілі, отриманні конкретного результату завдяки послідовному вирішенню поточних завдань. Технологія проектів відповідає вимогам часу, розширює простір для творчості дитини, активізує мислення, підсилює вмотивованість, надає педагогу й дітям можливість бути партнерами, уникаючи проявів домінантності. Проектна технологія дозволяє успішно формувати у старших дошкільників лідерські якості комунікабельності, організаторських умінь, партнерства, співчутливості, оскільки побудована на груповій взаємодії дітей з властивими їй явищами розподілу групових ролей, спілкування, взаєморозуміння. Моделювання дітьми під час виконання проекту процесу вирішення життєвих проблем дозволяє розвивати у них такі лідерські якості, як самостійність, ініціативність, креативність, відповідальність. Специфічні можливості проектної технології у формуванні лідерських якостей полягають у забезпеченні можливостей для прояву дитиною лідерських якостей у спілкуванні як з однолітками, так і з людьми іншого віку; формування різних видів лідерства (комунікативного і ділового, офіційного і неофіційного тощо) та засвоєння різних лідерських ролей (організатора, експерта, генератора ідей, комунікатора); попередження «негативних» рис лідера – таких як зверхність, домінантність, егоцентризм

Ключові слова: особистість; лідерство; старший дошкільник; освітній проект; співпраця; педагог

UDC 78.071.1
DOI: 10.52534/msu-pp3.2024.40

Daria Hudymenko*

Master of Science
Mykola Lysenko Lviv National Music Academy
79000, 5 Ostap Nyzhankivskiy Str., Lviv, Ukraine
<https://orcid.org/0009-0004-5732-4265>

Methods of teaching flute playing: Synthesis of Ukrainian and European schools

Article's History:

Received: 06.06.2024
Revised: 05.09.2024
Accepted: 25.09.2024

Suggested Citation:

Hudymenko, D. (2024). Methods of teaching flute playing: Synthesis of Ukrainian and European schools. *Scientific Bulletin of Mukachevo State University. Series "Pedagogy and Psychology"*, 10(3), 40-50. doi: 10.52534/msu-pp3.2024.40.

Abstract. The aim of the study was to investigate the methods of teaching flute playing through the unification of international schools. In the course of the study, a series of focus groups were held with 26 people, including experienced flutists, teachers of music schools and conservatories, and students of music faculties. The focus groups helped to find out which teaching methods are most effective and which aspects of Ukrainian and European schools can be successfully combined to achieve the best results in flute teaching. The study found that different breathing techniques, hand and finger positions, interpretation of musical works and development of musical ear are important for flute playing. The results of the study showed that the Ukrainian school emphasizes folk traditions and emotional expression, while the European school focuses on technical excellence and academic accuracy. The focus group participants agreed that a synthesis of these approaches could provide students with a more comprehensive music education, combining technical skills with a deep emotional understanding of music. Based on the data obtained, recommendations for teachers were developed that include a combination of techniques from both schools, which contributes to the harmonious development of students' musical abilities. The study points out the importance of an individual approach and the need to adapt techniques to the needs of each student, which is a key aspect of successful flute teaching. This approach allows taking into account the individual characteristics of each musician, contributing to their harmonious development and success in their musical career

*Corresponding author

Keywords: pedagogy; innovation; technology; adaptation; traditions

INTRODUCTION

The relevance of the study lies in the need to improve music education in the context of globalization and cultural exchange. Modern music education institutions face the challenge of combining national traditions with the best international practices, which is extremely important for the training of competitive musicians. Ukrainian music pedagogy has rich traditions, but often faces the need to integrate modern approaches used in European schools. At the same time, European flute schools are known for their technical excellence and systematic teaching methods, which makes them attractive for study and adaptation in the Ukrainian context. The combination of these two approaches can contribute to the creation of a unique methodology that will

be most effective for teaching flute playing. In addition, an essential aspect is the need for methods of individual approach to each student. In today's world, where standardization often prevails over individuality, it is relevant to find a balance between technical improvement and the development of a musician's personal qualities. The synthesis of Ukrainian emotional expressiveness and European technical precision will allow us to take into account the individual characteristics of each student, contributing to their harmonious development. This is especially crucial in the context of the growing competition on the international music scene, where musicians need to be not only technically proficient but also have a unique creative approach.



The study of flute teaching methods that combine Ukrainian and European schools is a critical area in music pedagogy. One of the leading researchers on this topic is C. Wang *et al.* (2022), who conducted a detailed analysis of the main approaches of both schools. J. Tran & L.M. Getz (2023) examined the historical development of the Ukrainian school of flute playing, paying attention to the influence of folk music and folklore on performance techniques and repertoire. They also investigated the teaching methods used in prominent Ukrainian music institutions, such as the Kyiv National Music Academy. G. Yuksel *et al.* (2022) and M. Yakovenko (2022) analysed the European School of Flute Playing through the prism of different national traditions, including German, French, and Italian. They studied the works of well-known European teachers such as Karl Joachim Andersen, Theobald Böhm and Jean-Pierre Rampal, who made a significant contribution to the development of flute technique and pedagogy. C. Rousseau *et al.* (2023) focused on analysing approaches to teaching breathing technique, articulation, and the development of musical expression used in European schools.

An important contribution to the study of the synthesis of Ukrainian and European schools was made by J. Kuroda & G. Koutaki (2022). They developed an integrative approach to learning that combines the best practices of both traditions. J. Lu (2023) emphasized the importance of an individual approach to each student, taking into account their musical preferences, level of training and psychophysiological characteristics. Other researchers who have made significant contributions in this area are L.K. Hicken & R.A. Duke (2023). They explored current trends in music pedagogy and analysed the possibilities of integrating the latest techniques into traditional approaches. They also considered the use of digital technologies, including video lessons and interactive curricula, to improve learning effectiveness.

The study by K. Sanborn (2021) focused on the practical implementation of the integrated methodology in the educational process. He has developed a series of teaching aids and exercises to help students master the technique of playing the flute, combining various folk melodies with classical European works. N. Eley *et al.* (2024) conducted a series of workshops to demonstrate the effectiveness of their methodology in practice, which received positive feedback from teachers and students. These studies are crucial for creating a comprehensive methodology for teaching flute that combines the rich traditions of Ukrainian and European schools. Their works help to improve the learning process, make it more effective and interesting for students, contributing to the development of highly professional musicians.

The aim of the study was to develop an effective methodology for teaching flute playing that combines the best traditions of Ukrainian and European schools, aimed at

improving students' skills and enriching their musical repertoire. The tasks were:

1. Analysis of theoretical aspects of the methods of Ukrainian and European schools of flute playing.
2. Conducting a series of focus groups to find out the effectiveness of flute teaching methods.
3. Identification of key recommendations for creating a future integrated teaching methodology.

MATERIALS AND METHODS

This study included several stages that provided a comprehensive approach to solving the tasks set in the methodology of teaching flute playing in Ukrainian and European schools. The study was conducted with the help of focus groups. Focus groups are an effective method for collecting in-depth information and qualitative data. Three focus groups were organized for the study, each consisting of 8-10 participants. The total number of participants was 26. Among the 26 focus group participants, 14 (54%) were women and 12 (46%) were men. The participants were divided into three main age groups, namely 18-25 years old 9 people (35%), 26-40 years old 10 people (38%), 41-60 years old 7 people (27%). There were 9 flute teachers from Ukraine. All participants had a higher musical education, many of them are winners of national and international competitions. The teachers were actively engaged in teaching and have their own methodological developments. Their experience ranged from 5 to 20 years of teaching flute at music schools, conservatories, and universities. There were 8 flute teachers from European countries. Their experience ranged from 7 to 25 years of teaching flute at music academies, universities, and conservatories in different European countries. The participants had experience with different pedagogical approaches, were proficient in modern teaching methods, and actively cooperate with international music communities. Many of them had participated in international projects and exchanges. The third group consisted of 9 people, students of music schools and conservatories, with a level of study ranging from intermediate to advanced flute playing. The students were of different ages (15-25 years old), who studied at music schools and conservatories in Ukraine and Europe. All of them had experience of participating in competitions and concerts, including achievements in the field of music. The main purpose of the focus group study was to identify and compare methodological approaches to teaching flute in Ukrainian and European schools. The study was conducted in accordance with the guidelines of the World Medical Association (2013), and all participants were informed about how the information they provided would be used. The preparation for the focus groups included several stages and methods that lasted for several months. During this time, participants were trained and used various forms of work. The main forms of work were open classes, lectures, technology, and other types of active work (Table 1).

Table 1. Characteristics of the forms of work

Name of the form of work	Description of activities
Open lessons	The participants directly observed the teaching methods in action. These lessons demonstrated different approaches to teaching flute, using examples of repertoire, performance techniques and pedagogical methods. The participants had the opportunity to participate in discussions, ask questions and receive answers from experienced teachers.
Lectures	They were aimed at theoretical training of the participants and included an overview of the history of the development of Ukrainian and European schools of flute teaching, analysis of various pedagogical approaches, and discussion of current trends in music education. The lectures were delivered both in the traditional format and with the use of multimedia presentations, which helped to better understand the material.
Leveraging technology	This included the use of lesson videos, online resources, music apps and performance analysis software. These enabled participants to receive feedback on their playing, analyse their mistakes and improve their skills. The use of technology also contributed to the interactivity of the learning process and engaged participants in active work.
Other active activities	This included masterclasses, seminars and workshops. Masterclasses were conducted by flute players and teachers who shared their experience and techniques. The seminars were aimed at discussing specific topics and problems in flute teaching, while the practical sessions allowed participants to consolidate their knowledge and skills.

Source: compiled by the author based on Z. Jing (2022) and J. Volckens *et al.* (2022)

After completing the training phase, the participants took part in focus groups where they answered questions, discussed their impressions of different methods, shared their own experiences and suggestions for improving flute teaching. Each focus group lasted approximately 1.5-2 hours and was held in the form of an open discussion. The moderator ensured that the structure of the discussion was followed, encouraged participants to actively participate, and asked additional questions and clarifications. Discussion notes were documented for further analysis. Both audio and video recordings were used, as well as the moderator's written notes. After the focus groups were completed, the results of the discussions were analysed, the main themes were identified and the key findings were summarized, which allowed for a comparative analysis of flute teaching methods in Ukrainian and European schools.

The study of the problem of flute teaching methods, namely the synthesis of the Ukrainian and European schools, was conducted in several stages:

1. Developing questions for discussion. The questions for the focus group should be open-ended and aimed at eliciting detailed information. Examples of questions:

- what are the main methods you use in teaching flute playing?
- what are the advantages and disadvantages of the Ukrainian/European methodology?
- what elements of one methodology can be integrated into another to improve learning outcomes?
- what challenges do you face when teaching students, and how do you overcome them?

2. Data analysis. After the focus group, all the notes were analysed to identify key themes, patterns, and insights. This analysis included data coding to organize the information.

3. Interpretation of the results. Based on the analysis of the focus group data, conclusions are drawn and recommendations are developed. In this case, it was determined

which elements of the Ukrainian and European methodologies are most effective and how they can be combined to improve the learning process.

4. Use of the results. The results obtained were used to develop a synthesized methodology for teaching flute playing, create new teaching materials, textbooks and methodological guidelines, and conduct trainings for teachers.

RESULTS

Teaching flute includes a number of approaches and methods aimed at developing students' technical, musical and artistic skills. Teaching this instrument requires high skill from the teacher and an understanding of the individual needs of each student. The main aspects of the methodology include technique, development of musical abilities, use of various teaching materials and integration of modern technologies. The basis of the methodology is the correct formulation of the playing technique. This includes:

- body and hand position, as it is relevant to teach students how to hold the instrument correctly, maintaining a relaxed and natural body position. Improper posture can lead to tension and even injury;
- proper breathing is critical to flute playing. Teachers teach diaphragmatic breathing techniques that allow for controlling airflow and ensuring sound stability;
- the correct position of the lips and muscles around the mouth determines the quality of the sound. Teachers work on developing the flexibility and strength of the lips, which is necessary to achieve a variety of tones and dynamics.

The development of musical abilities is an equally important aspect of the flute teaching methodology. Teachers pay great attention to the development of intonation and ear for music. This includes exercises in aural recognition of notes, intervals, and harmonies. Learning to read music from a sheet of music helps students to quickly learn new pieces and develop general musical literacy. Students also learn to understand and interpret musical works,

taking into account the stylistic features of different eras and composers. This includes working on phrasing, articulation and dynamics. As for the use of various teaching materials, which is a key component of the methodology, this includes technical exercises, repertoire, and the use of a number of methodological aids. Daily scales, arpeggios, and technical exercises help to develop finger dexterity and sound stability. Teachers select repertoire according to the level and interests of the students, including classical pieces, folk tunes, and contemporary music. The use of modern teaching aids and textbooks helps to systematize the learning process and ensure consistent learning.

The integration of modern technologies into the educational process opens up new opportunities for teachers and students. Teachers often use online resources for distance learning, which allows students to study at their own convenience. Video tutorials can also be useful for self-paced learning. The use of interactive programmes and learning applications helps to diversify classes and increase their effectiveness. Teachers recommend that

students record their performances for further analysis and self-correction. This helps to identify and correct technical and musical errors. Teaching the flute should be considered a complex and multifaceted process that includes technical training, development of musical abilities, use of various teaching materials and integration of modern technologies. Ukrainian and European schools of flute teaching have some common features. First and foremost, both schools pay great attention to technical exercises to develop motor skills and technical perfection. They include classical pieces in the learning process. Also, both schools use a systematic approach to teaching with individual attention to students and focus on proper breathing and breathing exercises. The training includes the history of music and flute art. They pay considerable attention to competitions and concert practice in the educational process. All teachers have extensive experience and a high level of professionalism. These are all things that unite the Ukrainian and European schools, but there are also distinctive features, as shown in Table 2.

Table 2. Comparison of flute teaching methods in Ukrainian and European schools

Aspect	Ukrainian school	European school
Technical exercises	Great attention to technique, exercises to develop motor skills	Emphasis on technical excellence, use of modern exercises
Repertoire	A combination of classical and folk music	Classical repertoire, including contemporary works and avant-garde
Teaching methods	Individual approach, pedagogical heritage of the national school	A systematic approach based on the pedagogical traditions of major European schools
Use of breath	Much attention is paid to proper breathing, the use of folk techniques	Emphasis on breathing exercises with a focus on European standards
Improvisation	An important part of learning, particularly in folk music	Depends on the school, some schools place a high value on
Historical awareness	Includes the history of Ukrainian music and flute art	Includes the history of European music and flute art
Teachers	Distinguished by individual methods, often graduates of national conservatoires	Teachers with extensive experience and international recognition
Competitions and performances	Local and national competitions, significant role of concert practice	International competitions and festivals, numerous concerts
Material base	Varies by region, often using national instruments	Modern tools and equipment, high level of material resources

Source: compiled by the author based on C. Spahn *et al.* (2021) and B. Şenay (2022)

Analysis of the responses showed that the most common methods are individual lessons (60%). Group lessons account for 20% of the total number of methods used. Master classes, which provide practical experience and direct interaction with experts, account for 15%. Video tutorials and interactive learning programmes are the least popular method, with a share of only 5%. These results indicate a preference for personal contact and an individualized approach to flute learning. This shows the importance of a personalized approach where the teacher can take into account the individual needs and level of the student. Group lessons and masterclasses also play a significant role in developing ensemble skills and interaction with other musicians. The use of video tutorials and interactive programmes,

although less popular, offers additional resources for self-study and improvement of playing technique (Fig. 1).

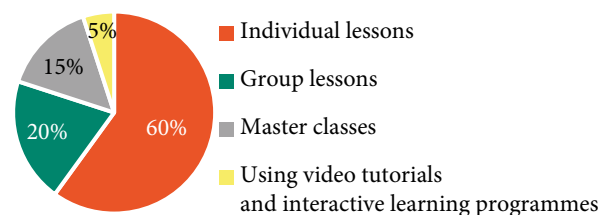


Figure 1. Answers to the question "What are the main methods you use in teaching flute?"
Source: compiled by the author

Based on the answers of the focus group participants to the following question, the analysis of the advantages and disadvantages of Ukrainian and European flute teaching methods revealed the following key points. The advantages of the Ukrainian methodology include deep insight into folk music and folklore, innovative approaches to teaching and an individual approach to students. This contributes to cultural enrichment and the development of creative thinking. However, the disadvantages are the limited number of

teaching materials, the lack of modern teaching aids, and insufficient integration with European standards. The European methodology, on the other hand, is characterized by a high level of technical training, a wide range of teaching materials and resources, and a systematic approach to learning. This ensures comprehensive development of technical skills. However, disadvantages include insufficient attention to national music and folklore, less emphasis on individual approach, and high cost of training and materials (Table 3).

Table 3. Answers to the question “What are the advantages and disadvantages of the Ukrainian/European methodology?”

Methods	Advantages	% ratio	Disadvantages	% ratio
Ukrainian methodology	Deep insight into folk music and folklore	40%	Limited number of training materials	50%
	Innovative approaches to teaching	35%	Lack of sufficient number of up-to-date methodological manuals	30%
	Individual approach to students	25%	Insufficient integration with European standards	20%
European school	High level of technical training	50%	Insufficient attention to national music and folklore	40%
	A wide range of training materials and resources	30%	Less emphasis on individual approach	30%
	A systematic approach to training	20%	High cost of training and materials	30%

Source: compiled by the author

According to the above information, combining the best elements of both methodologies can contribute to a more balanced and effective flute teaching system that takes into account both technical aspects and cultural characteristics. The introduction of European technical standards and methodological resources, together with the Ukrainian emphasis on folk music and individual approach, will ensure the comprehensive development of students. This will improve the quality of education while preserving national traditions and culture, which is important for creating musicians with a broad outlook. The study found that some elements of Ukrainian and European flute teaching methods can be integrated to improve learning outcomes (Fig. 2).

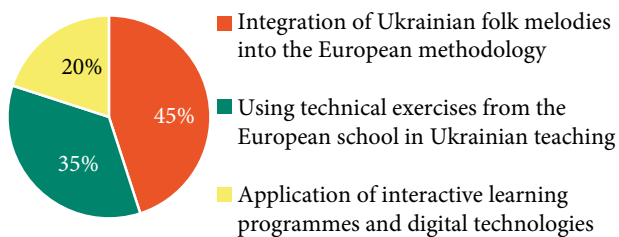


Figure 2. Answers to the question “What elements of one methodology can be integrated into another to improve learning outcomes?”

Source: compiled by the author

The integration of Ukrainian folk melodies into the European methodology has been found to contribute to the cultural enrichment of students by providing them

with the opportunity to explore the musical traditions of their country. It will also help students to develop a unique performance style that reflects their national roots and contribute to the promotion of Ukrainian music on the international stage. The use of technical exercises from the European school in Ukrainian teaching will increase the level of technical training of students. European technical exercises are known for their structured and systematic nature, which allows students to consistently improve their skills. The integration of these exercises into the Ukrainian methodology will help prepare students for participation in international competitions and festivals, where a high level of technical skill is mandatory. The use of interactive curricula and digital technologies will ensure a modern approach to learning, making it more effective and accessible. The use of online platforms, video tutorials and interactive programmes will allow students to study at their own pace and time, and provide access to additional learning materials. Digital technologies also open up opportunities for distance learning, which is particularly relevant in today’s environment. Therefore, the integration of these elements will create a more comprehensive and flexible system of flute teaching that will take into account both traditional and modern methods, contributing to the comprehensive development of musicians. This approach will not only preserve national traditions but also increase the competitiveness of students at the international level.

Teaching flute has its advantages and challenges. The main advantages include an individual approach (considering the characteristics of each student and creating

optimal conditions for their development), the use of modern technologies (learning becomes more accessible and interesting) and a variety of teaching materials (ensuring the comprehensive development of technical and musical skills). However, there are also significant challenges in any European country. There are difficulties with playing technique that require constant attention and correction from the teacher. The motivation of students can change, which requires the teacher to constantly search for new approaches to maintain interest. If there is an insufficient amount of modern materials and teaching aids, this can limit opportunities for development. When teaching students, teachers face a number of challenges that affect the effectiveness of the learning process. Their analysis is presented in Figure 3.

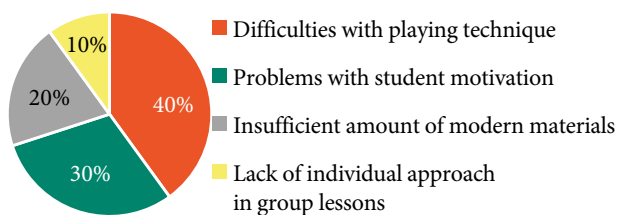


Figure 3. Answers to the question

“What challenges do you face when teaching students?”

Source: compiled by the author

One of the main problems is difficulties with playing technique. This includes problems with hand placement, breathing and the general execution of technical elements that require considerable time and effort to correct. Insufficient technical training can be an obstacle to achieving high results and participating in competitions. Another important issue was student motivation. A decline in interest in classes can be due to various factors, such as lack of progress, mismatch of learning materials with students' interests, or personal problems. Lack of motivation has a negative impact on the regularity and quality of classes, making it difficult to achieve goals. The lack of up-to-date materials is also a significant challenge. Many teachers note that existing textbooks and methods are outdated and do not meet modern requirements. This limits opportunities for innovative approaches and effective teaching, and reduces student engagement. A final challenge is the lack of individual attention in group classes. Group classes have their advantages, but they do not always allow for the individual needs of each student. This can lead to some students being left without the necessary attention and support, which hinders their development. Addressing these challenges requires a comprehensive approach, including improving technical training, increasing student motivation, updating teaching materials and ensuring that each student is given an individual approach.

Each participant has their own methods of solving the above difficulties, in particular, with regard to playing technique, most organise intensive individual lessons and special exercises. Among the study participants who face a

problem with motivation, they use more interesting repertoire and involvement in performances. Those who had insufficient modern materials were more likely to use online resources and organize collaboration with other specialists. The least common challenge among students was the lack of an individual approach in group lessons. A method to address this is to combine group lessons with individual consultations. The study allowed us to identify commonalities and differences in teaching approaches, as well as to identify possible areas for integrating the best practices of both schools in teaching flute. Since the focus groups were conducted to assess the effectiveness of teaching methods in Ukrainian and European higher education institutions and the main task was to identify the most effective elements of both systems, it is important to identify recommendations for their integration to improve the educational process. Based on the analysis of the data obtained, several key aspects affecting the quality of education should be highlighted. Ukrainian teachers prefer traditional teaching methods, including lectures and seminars. European methods are more focused on interactive methods such as group projects, discussions and problem-based learning. In Ukraine, summative assessment based on exams and tests prevails. In Europe, regular ongoing assessments are practised, which include projects, presentations and practical tasks. European educational institutions actively use modern technologies and online platforms to conduct classes and communicate with students. In Ukraine, such technologies are being introduced more slowly, but have great potential to improve the learning process.

Based on the findings, the following recommendations were identified for the integration of effective elements of Ukrainian and European methods. Teachers should combine traditional lectures with interactive methods, such as group projects and discussions, which will help students develop critical thinking and creativity. The introduction of regular ongoing assessments will allow students to receive feedback throughout the learning process, which will help them to adjust their knowledge and skills in a timely manner. Active implementation of online platforms for learning and communication with students, which will contribute to a more efficient organization of the learning process and provide access to additional learning materials. Regular trainings and seminars for teachers on the latest teaching methods and the use of modern technologies in the educational process. Integration of the best practices of Ukrainian and European teaching methods will help to improve the quality of education, develop critical thinking and professional skills of students. Implementation of these recommendations requires a comprehensive approach and active participation of all participants in the educational process.

The development of a synthesised methodology for teaching flute is also an important task that requires careful analysis and integration of the best practices of Ukrainian and European music education. This process involves several stages, from researching existing methods to creating

new teaching materials, textbooks and guidelines, as well as conducting trainings for teachers:

1. The first stage of the development of the synthesised methodology includes research and analysis of existing approaches to teaching flute playing. This involves studying literature, analysing curricula and methodological guidelines, and conducting interviews with experienced teachers. Particular attention is paid to identifying similarities and differences between Ukrainian and European schools of teaching. This stage also includes collecting and analysing data on student outcomes, which allows us to assess the effectiveness of different approaches.

2. The second stage is to create new teaching materials and textbooks that combine the best elements of both schools. This includes the development of specialised exercises to develop playing technique, the selection of repertoire that reflects the diversity of musical styles, and the development of methodological guidelines for teachers. Teaching materials should be adapted to different levels of students, from beginners to professionals. It is also essential to take into account current trends in music education and use the latest technologies to improve the learning process.

3. The third stage involves the creation of methodological guidelines for teachers, which describe in detail the main principles and approaches of the synthesised methodology. These guidelines should include specific advice on how to conduct lessons, use teaching materials and assess student performance. The guidelines should also consider the individual characteristics of students and ensure that approaches can be adapted to the needs of each student. It is also important to include recommendations for developing musical creativity and improvisation, which are an integral part of flute learning.

4. The fourth stage involves training for teachers to familiarise them with the new methodology and learn how to use it effectively in practice. The training should include both theoretical sessions and practical workshops where teachers can try out new approaches to working with students. It is also relevant to provide opportunities for teachers to share their experiences, allowing them to receive feedback and improve their skills.

Once a new methodology has been implemented, it is critical to continuously monitor and evaluate its effectiveness. This includes collecting data on student performance, conducting surveys and interviews with teachers, and analysing feedback from students and their parents. This data allows identifying the strengths and weaknesses of the methodology and making the necessary adjustments. Continuous monitoring also helps to maintain the high quality of the educational process and ensure that it meets modern requirements. One of the essential aspects of developing a synthesised methodology is the creation of new textbooks and teaching aids. These materials should contain both theoretical information and practical exercises to help students develop their flute skills. Textbooks should be structured in a way that ensures the gradual development of students' technique and musical thinking. It

is also important to include examples of music from different styles and eras, allowing students to be exposed to a diversity of musical cultures.

The development of learning materials also includes the use of modern technology. This can include creating interactive textbooks and online courses that allow students to learn the material on their own and receive feedback. The use of video tutorials and audio recordings also helps students to better understand the technical aspects of flute playing and improve their skills. It is also significant to provide access to learning materials via the Internet, allowing students to learn at any time. Training for teachers is an integral part of implementing a new methodology. The training should be aimed at introducing teachers to the basic principles of the synthesised methodology and teaching them how to use the new teaching materials effectively. Practical workshops where teachers can try out new approaches to working with students are particularly useful. It is also relevant to provide opportunities for teachers to share their experiences, allowing them to receive feedback and improve their skills.

The development of a synthesised methodology for teaching flute is a complex and multifaceted process that includes researching existing methods, creating new teaching materials and textbooks, developing methodological guidelines and conducting trainings for teachers. It is also important to constantly monitor and evaluate the effectiveness of the new methodology, which allows maintaining the high quality of the educational process and ensuring its compliance with modern requirements. The synthesised flute teaching methodology aims to combine the best elements of Ukrainian and European schools, ensuring the comprehensive development of students' musical skills and creative potential.

DISCUSSION

The results of the work show that the Ukrainian school of flute playing traditionally focuses on folk melodies, rich folklore heritage and individual approach to teaching. The activities of the representatives of this school are focused on the development of artistic thinking, emotional expression and interpretation of music. The European school, on the other hand, emphasizes the importance of technical excellence, academic approach and strict performance standards, and is characterized by a high level of discipline and methodology in teaching. The study showed that combining these two approaches can create a more balanced teaching methodology that takes into account both the technical and artistic aspects of flute playing. These findings are in line with the work of C.Y. Voon (2020) and C. Xu (2022), who found that a methodology combining elements of both schools would contribute to the development of both technical skill and musical expression of students.

This study compared Ukrainian and European methods of teaching flute in music schools. Students who studied using the mixed methodology showed higher results in both technical and artistic aspects of playing. The study

by Y. Torres Medina & E. Medina Abreu (2022) confirmed these findings, demonstrating that the synthesis of methods contributes to faster and better learning by students. In particular, experiments conducted in music schools in different cities showed that students who studied the synthesized method significantly improved their technical skills (speed of playing, accuracy of intonation, and clarity of performance) compared to those who studied the traditional method. In addition, these students showed greater expressiveness and emotion in their performance of music.

The results showed that cultural context also plays an important role in the process of learning to play the flute. The Ukrainian musical tradition is rich in folk melodies and songs that require a special approach to interpretation. The use of these elements in the learning process helps students develop a sense of style and understanding of musical works. The European School, with its academic approach, provides students with the necessary basis for mastering the technique of playing and performing complex musical works. These findings are consistent with the work of Y. Li (2023), N. Brochec & T. Tanaka (2023), who noted that the integration of various folk melodies into the learning process contributes to the development of students' musical ear and interpretive skills. Students studying using the synthesized methodology demonstrated a deeper understanding of musical works and the ability to interpret them.

The results indicate that pedagogical approaches also have a significant impact on learning outcomes. The Ukrainian school emphasises the importance of an individual approach to each student, taking into account their personal needs and abilities. The European school, on the other hand, uses a more structured approach with clearly defined learning stages and requirements for students. These findings are consistent with the research of C.E. Burns (2019), V. Trollinger *et al.* (2021), which showed that a combination of these approaches can achieve optimal results. The use of an individual approach together with a structured curriculum contributes to more effective learning by students and the development of their musical abilities. For example, the study found that students who were taught using the synthesized methodology had better results in competitions and exams than those who were taught using the traditional methodology.

The activities of teachers of the European school focus on the development of technical skills through systematic exercises and etudes. The Ukrainian school, on the other hand, focuses more on artistic performance and interpretation of musical works. This study has shown that a combination of these approaches allows students to develop both technical and artistic skills. These findings are in line with the work of D. Chin *et al.* (2021) and S. Winkler *et al.* (2024). They noted that the use of systematic exercises and etudes in combination with work on artistic performance of pieces contributes to the comprehensive development of students' musical abilities. In particular, students who studied according to the synthesized methodology demonstrated a high level of technical training and

the ability to perform musical pieces expressively. The results obtained regarding the importance of using multimedia materials, online resources, and software for teaching music are consistent with the work of R. Rust *et al.* (2022). Their findings showed that the use of interactive technologies in teaching flute playing increases student motivation and engagement in the learning process. The present study confirmed these findings, as students with access to modern educational technologies demonstrated better results in technical training and artistic performance. In particular, the use of interactive platforms and mobile applications allows students to receive real-time feedback, which helps them to correct mistakes and improve their playing technique more quickly. Online resources, such as video tutorials and interactive sheet music, provide students with the opportunity to learn new pieces on their own and gain additional knowledge outside traditional classes. In addition, performance recording and analysis software allows students to independently assess their success and progress, which contributes to a more conscious and focused approach to learning. In general, the use of multimedia materials and interactive technologies in music teaching not only increases the effectiveness of the learning process, but also makes it more interesting and engaging for students. This is confirmed by the research of C. Xu (2022), which shows the positive impact of the latest technologies on the quality of music education and the development of students' creative abilities.

The results of the study showed that the advantages of the synthesised methodology of teaching flute playing include both technical and artistic aspects of learning. The combination of systematic technical training with an emphasis on artistic performance allows students to achieve a high level of proficiency. In addition, the use of an individual approach together with a structured training programme contributes to more effective learning. This is consistent with the findings of researchers T. Kato *et al.* (2018) and K. Moriah (2023). They added that the integration of Ukrainian folk melodies into the learning process helps students develop a sense of style and understanding of musical works. The use of modern technology in teaching makes the learning process more interactive and engaging for students. All these aspects together create favourable conditions for the comprehensive development of students' musical abilities.

The introduction of the appropriate methodology into the educational process of music schools and conservatories can be a significant step forward in the training of highly skilled flutists capable of demonstrating both technical mastery and artistic expression in their playing. The same conclusion was also reached by T. Hadar *et al.* (2024), who came to the same conclusion. They noted that this would allow preserving and developing the cultural traditions of Ukraine, while integrating into the European music community and enriching it with new approaches and ideas.

Based on the study, it can be concluded that the synthesis of the Ukrainian and European schools of flute teaching

contributes to a more effective educational process. The combination of the technical excellence of the European school with the artistic approach of the Ukrainian school allows achieving higher results in teaching flute playing. The results of this study confirm the findings of other researchers Z. Jing (2022) and A. Karn *et al.* (2023) that the synthesis of methods contributes to the development of different skills of students. The use of an individual approach together with a structured curriculum allows for optimal results. In addition, the integration of Ukrainian folk melodies into the learning process contributes to the development of students' musical ear and interpretive skills. It is also worth paying attention to the individual characteristics of students and developing methods that take into account their needs and abilities. This will help to create a more effective and tailored curriculum for each student.

CONCLUSIONS

It has been found that success in learning to play the flute largely depends on the correct technique, which includes the precise formation of the body position, breathing, and embouchure. The integration of modern technologies is an important step towards modernizing the educational process. The analysis of Ukrainian and European flute techniques revealed significant differences and commonalities. The integration of the best elements of both Ukrainian and European education can significantly improve the effectiveness of the educational process, ensuring the comprehensive development of students and increasing their competitiveness in the international arena.

Based on the results of the study, it was found that the greatest challenges among the participants were difficulties

with playing technique. Integration of Ukrainian folk melodies into the European methodology and the use of technical exercises from the European school in Ukrainian teaching seemed to be the most effective approaches to improving learning outcomes. The lack of modern teaching materials remains an urgent problem. This requires updating teaching aids and developing individualized programmes. The development of an integrated teaching methodology was the next stage of the study. It included a comprehensive programme that combined technical exercises typical of European schools and the musical and emotional approach of the Ukrainian school.

The study has shown that the constant exchange of experience between teachers of Ukrainian and European schools can be an additional incentive for the development of innovative approaches to teaching flute playing. The results of the study confirmed the feasibility and effectiveness of integrating the best traditions of Ukrainian and European flute schools into a single methodology. This opens up new perspectives for music education and the development of students' performance skills, contributing to the preservation and enhancement of musical traditions and cultural heritage. The limitation of the study was its selective representativeness. Prospects for further research are the application of the proposed integrated methodology for teaching flute playing to students.

ACKNOWLEDGEMENTS

None.

CONFLICT OF INTEREST

None.

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Дар'я Гудименко

Магістр

Львівська національна музична академія імені Миколи Лисенка

79000, вул. Остапа Нижанківського, 5, м. Львів, Україна

<https://orcid.org/0009-0004-5732-4265>

Методика викладання гри на флейті: синтез української та європейської школи

Анотація. Метою дослідження було вивчення методик навчання гри на флейті шляхом об'єднання міжнародних шкіл. У ході дослідження було проведено серію фокус-груп за участю 26 осіб, серед яких були досвідчені флейтисти, викладачі музичних шкіл та консерваторій, а також студенти музичних факультетів. Фокус-групи допомогли з'ясувати, які методи викладання є найбільш ефективними та які аспекти української та європейської шкіл можуть бути успішно поєднані для досягнення найкращих результатів у навчанні гри на флейті. У ході дослідження виявлено, що для гри на флейті важливими є різні техніки дихання, позиція рук та пальців, інтерпретація музичних творів та розвиток музичного слуху. Результати дослідження показали, що українська школа акцентує увагу на народних традиціях та емоційній виразності, тоді як європейська школа орієнтована на технічну досконалість та академічну точність. Учасники фокус-груп погодилися, що синтез цих підходів може забезпечити учням більш всебічну музичну освіту, де технічні навички поєднуються з глибоким емоційним розумінням музики. На основі отриманих даних було розроблено рекомендації для викладачів, які включають поєднання технік обох шкіл, що сприяє гармонійному розвитку музичних здібностей учнів. У дослідженні підкреслено важливість індивідуального підходу та необхідність адаптації методик до потреб кожного учня, що є ключовим аспектом успішного навчання гри на флейті. Такий підхід дозволяє враховувати індивідуальні особливості кожного музиканта, сприяючи їхньому гармонійному розвитку та успіху в музичній кар'єрі

Ключові слова: педагогіка; інновації; техніка; адаптація; традиції

UDC 376-056.264-053.5:159.946.3]:793.7

DOI: 10.52534/msu-pp3.2024.51

Kateryna Tychyna*

PhD in Psychology, Senior Lecturer
 Borys Grinchenko Kyiv Metropolitan University
 04053, 18/2 Bulvarno-Kudriavska Str., Kyiv, Ukraine
<https://orcid.org/0000-0002-3072-0450>

Natalia Babych

PhD of Pedagogy, Associate Professor
 Borys Grinchenko Kyiv Metropolitan University
 04053, 18/2 Bulvarno-Kudriavska Str., Kyiv, Ukraine
<https://orcid.org/0000-0001-8923-8960>

Yevheniia Lyndina

PhD of Pedagogy, Associate Professor
 Berdyansk State Pedagogical University
 69000, 66 Zhukovskiy Str., Zaporizhzhia, Ukraine
<https://orcid.org/0000-0002-4615-6807>

Olena Revutska

PhD in Pedagogy, Associate Professor
 Berdyansk State Pedagogical University
 69000, 66 Zhukovskiy Str., Zaporizhzhia, Ukraine
<https://orcid.org/0000-0003-4311-4748>

The impact of Playdough games on the development of oral motor skills in preschool children with childhood apraxia of speech

Article's History:

Received: 17.05.2024

Revised: 22.08.2024

Accepted: 25.09.2024

Suggested Citation:

Tychyna, K., Babych, N., Lyndina, Ye., & Revutska, O. (2024). The impact of Playdough games on the development of oral motor skills in preschool children with childhood apraxia of speech. *Scientific Bulletin of Mukachevo State University. Series "Pedagogy and Psychology"*, 10(3), 51-60. doi: 10.52534/msu-pp3.2024.51.

Abstract. The relevant challenges are the use of innovative approaches that conserve both the speech therapist's and the child's resources while addressing multiple goals in speech therapy. The authors of this article have adopted such an approach to develop oral motor skills, which are crucial for speech development in preschoolers, particularly those with childhood apraxia of speech. This study aimed to evaluate the effectiveness of an author-developed therapy using Playdough games for preschool children with childhood apraxia of speech. A controlled design with repeated measures was employed. The primary diagnosis of CAS was established based on clinical assessment. A comparative evaluation of two groups (control and experimental) was conducted using a developed methodology for assessing the level of manual and oral motor skills in preschool children before and after the author-developed therapy using Playdough games. Researchers discovered that the systematic use of their author-developed Playdough games positively impacted the motor skills of children with CAS. Children in the experimental group, who participated in Playdough therapy, demonstrated significant improvements in both manual and oral motor skills, increased precision and focus in movement execution, and enhanced accuracy and speed of articulatory movements. There was a reduction in delays and incorrect movement sequences during finger movement tasks. Children required less additional time and significantly less assistance from the speech therapist, indicating a positive impact of using Playdough in therapy. The following skills improved: transitions between articulatory

*Corresponding author



positions, which helped children avoid coarticulation difficulties; planning of movement sequences; and smooth transitions between sounds and syllables. The practical significance of this study lies in the effectiveness of using Playdough games for significantly improving oral motor skills, movement precision, and concentration in children with childhood apraxia of speech, thereby reducing the need for additional speech therapy support

Keywords: games with plasticine; speech disorders; motor functions; effectiveness; formative approach

INTRODUCTION

The relevance of this research is driven by the need for innovative and effective approaches to therapy for children with childhood apraxia of speech (CAS) who experience difficulties with oral motor skills. The use of Playdough as a multi-functional tool in speech therapy shows promise for the comprehensive development of these skills in this specific group of children. Moreover, the integration of creative and interactive methods into therapy can make sessions more engaging and motivating for children, increasing their participation in the learning process. Given the positive results obtained in the experiment, this research can contribute to expanding the range of effective techniques for speech therapy with children who have CAS and improving the quality of care provided to this patient group.

Oral-motor skills encompass the movements of the muscles of the mouth, lower jaw, tongue, lips, and cheeks. The strength, coordination, and control of these movements are essential for feeding (sucking, chewing, biting) and are crucial for speech articulation and facial expressions. Children with childhood apraxia of speech (CAS) often have impairments in these skills, which can negatively impact their ability to speak clearly and understandably. Research by A.M. Chilosi *et al.* (2022) and J. Iuzzini-Seigel *et al.* (2022) demonstrates that these children frequently exhibit impairments not only in the oral motor but also in manual motor skills. The close relationship between manual and oral motor skills in children is highlighted in studies by H.B. Caldwell (2022) and R. Onesimo *et al.* (2023). Impairments in these skills in children with CAS can negatively affect their speech development for several reasons:

1) Difficulties in motor planning and programming, specifically, children with CAS may find it challenging to plan the sequence of manual movements required to complete a motor task (Bombonato *et al.*, 2022), such as assembling a puzzle or building with blocks. In the speech, difficulties with planning and programming oral movements manifest in challenges with coarticulatory transitions, which occur when the articulation of different speech segments overlaps, causing the articulatory configurations of different sounds to interfere with each other. Anticipatory coarticulation (where planning the articulation of the next sound influences the previous one) and perseverative coarticulation (where the articulatory configuration of one sound influences the articulatory

configuration of the next) are normal processes, but problems with motor planning and programming often lead to impairments in this function.

2) Slow and inept coordination of movements: children with CAS may find it difficult to perform tasks that require precise hand coordination, such as catching a ball or drawing (Grigos *et al.*, 2024). Similarly, difficulties in coordinating the movements of the articulators will lead to speech errors (Iuzzini-Seigel *et al.*, 2022; Onesimo *et al.*, 2023).

3) Impaired rhythmic skills (arrhythmia, lack of fluidity): children with CAS may find it difficult to reproduce rhythmic sequences, both with their hands and their articulators (Mohamadi, 2020; Miller & Guenther, 2021; Vuolo & Wisler, 2022).

Early diagnosis and intervention can help children with CAS develop the necessary skills for clear and understandable speech (Grigos *et al.*, 2024). One such tool is the use of Playdough games. Playdough is a soft, colourful dough for children's play, made from flour, salt, water, and food colourings. It is available in a variety of colours, textures, and forms, and is both simple and safe to use. Playdough is affordable and does not require significant financial or time investments, while also allowing educators to choose different colours and scents for the material. Playdough is an effective tool for developing children's manual skills (Suryameng, 2016; Shire *et al.*, 2021), that is, the skills of the hand and finger muscles. By playing with Playdough, children squeeze, squish, and throw it, strengthening their muscles, improving coordination (particularly visual-motor coordination), and developing tactile and proprioceptive sensitivity. Playdough also helps to develop bilateral hand coordination.

The motor and premotor brain structures that control actions, motor activity, coordination, speech mobility, and articulation interact with structures responsible for gross and fine motor skills. Therefore, the simultaneous activity of hand movements and articulators during Playdough modelling contributes to strengthening the muscles of the fingers and articulators; determining the position of the articulators through the development of proprioceptive sensitivity; coordinating and planning the movements of the fingers and articulators when reproducing rhythmic sequences; and facilitating coarticulatory transitions between articulatory positions. The study aimed to investigate the impact of Playdough games on the development of oral

motor skills in preschool children with CAS. The novelty of the research lies in its interdisciplinary approach to studying the problem, systematising theoretical material on the features of the formation of manual and oral motor skills in preschool children with CAS, and developing an author's therapy using Playdough games.

MATERIALS AND METHODS

This study employed a controlled repeated-measures design. Participants received therapy involving Playdough games for 14 weeks between September and December 2022. Both manual and oral motor skills were assessed before and after the therapy. The study included 20 children aged 4-6 years with CAS, normal intelligence, and no co-occurring disorders. The diagnosis of CAS was established based on a clinical assessment that included: a neurologist's report, speech development history, a report from the (IRC), an articulation assessment, an assessment of phonological skills, and a language assessment. Before the study, parents were informed and provided consent. The study was organised based on cooperation agreements between Borys Grinchenko Kyiv Metropolitan University and the preschool educational institution. Permission to conduct the study was granted by the administrations of Preschool educational institution No. 485 and Borys Grinchenko Kyiv Metropolitan University.

Ten children (experimental group) participated in a 14-week program at a preschool, receiving additional therapy that included author-developed Playdough games focused on developing manual and oral motor skills. Meanwhile, another ten children (the control group) did not receive any additional therapy involving Playdough games and continued solely with the correctional programme provided by the institution. Therapy sessions were conducted by experienced speech-language therapists specialising in CAS, along with students of the second (master's) level students from Borys Grinchenko Kyiv Metropolitan University studying Speech Therapy. These 30-minute sessions, both individual and group, were held twice a week, totalling 20 individual and 8 group sessions per child. The therapy included the following components:

- development of manual skills;
- development of oral motor skills.

Before and after therapy, the development of manual and oral motor skills in both the experimental and control groups was assessed. A diagnostic tool was developed specifically to evaluate these skills in preschool children. The tasks designed for assessing manual skills were based on diagnostic methods from C. Amiel-Tison & J. Goselin (2001); S.E. Henderson *et al.* (2007); Y.V. Ribtsun (2023). The diagnostic tasks for the assessment of oral motor skills were based on the developments of A.V. Korol (2017); N. Babych & K. Tychna (2021a); Y.V. Ribtsun (2021). The assessment method consisted of two blocks. *Block I* focused on assessing manual skills, using tasks that required reproducing a series of finger positions with the dominant and non-dominant hands, based on visual or kinesthetic cues.

These tasks were divided into two series: the first series focused on reproducing static and dynamic finger positions using visual cues with both dominant and non-dominant hand, and the second series involved reproducing the same tasks with the dominant and non-dominant hand based on kinesthetic sensations (with eyes closed). *Block II* focused on assessing oral motor skills and also included two series of tasks. The first series assessed the ability to reproduce static and dynamic articulatory exercises in front of a mirror or without a mirror, following verbal instructions. The second series aimed to determine the level of oral motor skill development, specifically the ability to perceive the positions of the lips, tongue, lower jaw, and cheeks while articulating sounds, using visual cues or prompt cards.

The research was conducted with consideration for the age-specific and psychological characteristics of preschool children with CAS. All ethical principles were adhered to, and the rights of each research participant were not violated. The honour and dignity of participants were not undermined, discrimination was not tolerated, and no harm was caused to the participants' health. During the testing, recommendations regarding the ethical aspects of conducting educational research developed by authoritative organisations such as the American Educational Research Association (2011) and the British Educational Research Association (2018) were followed. Results were published anonymously.

The theoretical and methodological foundation for studying the impact of Playdough games on the development of manual and oral motor skills in preschool children with childhood apraxia of speech (CAS) was established through numerous research studies. These include investigations into the development of oral-motor skills and speech (Alcock, 2006; Gernsbacher *et al.*, 2008). Additionally, research on childhood apraxia of speech and related neurological and behavioural aspects has been considered (American Speech-Language-Hearing Association, 2007; Iuzzini-Seigel *et al.*, 2022; Grigos *et al.*, 2024). In the context of using Playdough games to develop children's manual skills, the studies of S. Suryameng (2016) and K.A. Shire *et al.* (2021) are noteworthy, highlighting therapeutic approaches based on dynamic and tactile cues used with young children. A crucial aspect of this research involved the diagnosis and assessment of manual and oral motor skills (Henderson *et al.*, 2007; Babych & Tychna, 2021b; Ribtsun, 2023), allowing for a comprehensive evaluation of the development of these skills. Furthermore, empirical studies and models explaining speech and motor impairments in children with CAS were considered (Malmenholt *et al.*, 2017; Miller & Guenther, 2021).

Methods of analysis and synthesis were employed to examine key aspects of manual and oral motor skills, patterns of their development in children, and their levels of development in preschool children with typical development and CAS. Additionally, research on Playdough games and their impact on the development of manual and oral motor skills in preschool children was explored.

Experimental and testing methods were used to investigate the status and level of development of manual and oral motor skills in children before and after the experimental intervention (therapy) in both the experimental and control groups. Assessments were conducted individually

with each child. The pedagogical experiment method was directly applied during therapy sessions involving Playdough games with children in the experimental group only. The Playdough therapy consisted of three stages, as presented in Table 1.

Table 1. Stages of therapy using Playdough games for the development of manual and oral motor skills in preschool children with CAS

Stage	Goal	Frequency	Type of session
Preparatory stage	Familiarisation and study of 2 sets of exercises for developing manual (24 exercises = 12 static + 12 dynamic) and oral motor skills (24 exercises = 12 static + 12 dynamic)	Within 8 sessions; 1 session = 3 exercises for developing manual skills + 3 exercises for developing oral motor skills	Individual therapy
Main stage	Combining the exercise sets learned in the preparatory stage to develop manual and oral motor skills simultaneously; consolidating simultaneous performance in the game "Find a Pair"	Within 12 sessions	Individual therapy
Final stage	Independent practice of consolidated skills in a board game	Within 8 sessions	Group therapy

Source: developed by the authors

A comparative method was employed to analyse the level of development of manual and oral motor skills before and after therapy in both the experimental and control groups. Quantitative and qualitative analysis methods were applied to interpret the results and examine the impact of Playdough games on the development of manual and oral motor skills in preschool children with CAS. A data summarisation method was used to formulate conclusions. The study had a relatively small sample size and did not include a comparison group with other types of therapy.

RESULTS AND DISCUSSION

Diagnosis using the author's methodology enabled an empirical evaluation of the development of manual and oral motor skills before and after therapy using Playdough games and determined their level of development in children with CAS. The summarised results of the assessment for Block I, which focused on the development of manual skills in children with CAS before and after therapy (the formative experiment) in the experimental group, are presented in the diagram (Fig. 1).

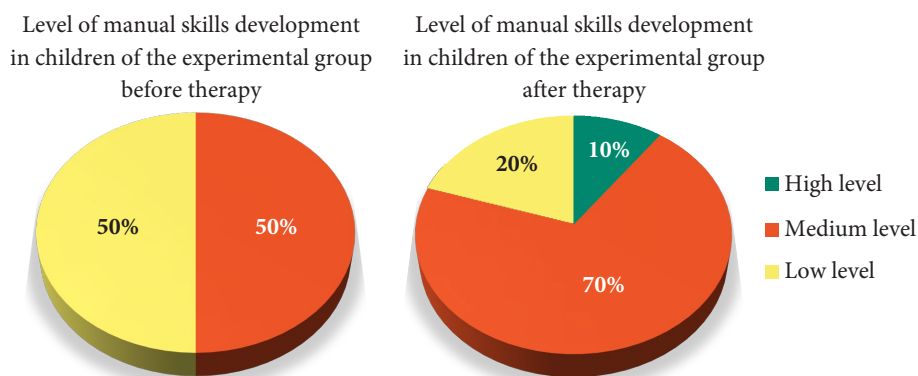


Figure 1. Level of manual skills development in preschool children with CAS (experimental group) before and after therapy

Source: developed by the authors

The results presented in the diagram (Fig. 1) indicate an increase in the level of development of manual skills in the experimental group of children. Specifically, there was an increase in the proportions of both high and medium levels of manual skills development, while the proportion

of children at the low level decreased accordingly. Qualitative analysis of the results revealed the following changes: the children became more focused and concentrated during the tasks; the quality and accuracy of their movements improved when completing the diagnostic tasks based on

kinesthetic examples. Notably, difficulties that manifested as trembling and slow, hesitant movements decreased. There was an increased percentage of accurately executed positions involving the flexion and extension of individual fingers. When repeating finger positions in a specific rhythm, the children found it easier to maintain the designated rhythm and transition smoothly from one movement to another. This is evidenced by a reduction in the occurrence of unnaturally interrupted and uncontrolled movements that had previously complicated the execution of rhythmic tasks before therapy. The number of delays and incorrect movement sequences during the execution of

finger movement tasks decreased. While performing diagnostic tasks, the children required less additional time and significantly less frequently sought help from the speech therapist to execute movements correctly. There was a notable improvement in finger dexterity and differentiation during the tasks, indicating a positive impact of the use of playdough in the therapy. The quality of performance on diagnostic tasks such as "Pointing Gesture", "Pincer Grip", "Bunch" and others significantly improved. In terms of the indicators for the control group, no significant changes in the development of manual skills occurred during the formative phase alongside the experimental group (Fig. 2).

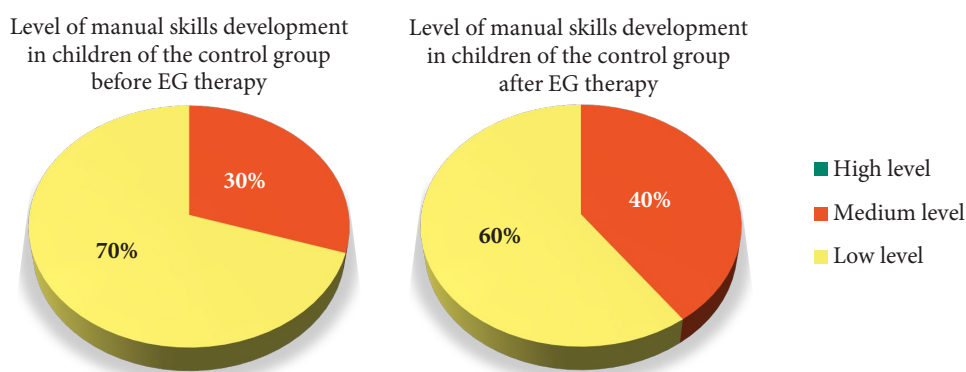


Figure 2. The level of manual skills development in preschool children with CAS (control group) before and after the therapy of the experimental group (EG)

Source: developed by the authors

It was observed that there was a slight increase in the proportion of children demonstrating a medium level of manual skill development, and correspondingly, a decrease in those at a low level. However, the high level remained unattainable for these children. It can be hypothesised that these results are linked to insufficient targeted intervention aimed at developing manual skills in this particular group of children and that they may require

additional exercises not only in speech therapy sessions but also in physical education classes. This is because speech therapists in preschool institutions may not be able to address all aspects of manual skill development, as it falls outside their primary scope of practice. The results of the diagnostic assessment of oral motor skills in the experimental group before and after therapy are presented in the diagram (Fig. 3).

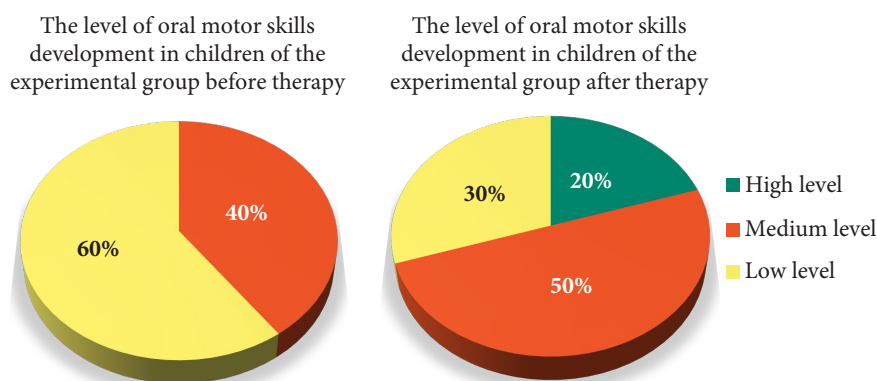


Figure 3. Level of oral motor skills development in preschool children with CAS (experimental group) before and after therapy

Source: developed by the authors

As a result of the formative phase of the study, there was an increase in the level of development of oral motor

skills in the experimental group of children. The indicators for both the high and average levels significantly improved,

leading to a corresponding decrease in the low level of oral motor skills. The qualitative indicators of these changes included an increase in the accuracy of completing the proposed tasks, as well as enhanced speed and fluidity of articulation movements and improved coordination and intentionality of actions. Through systematic therapy, the children learned to transition smoothly from one articulatory position to another, which helped them avoid difficulties with coarticulatory transitions, resulting in clearer and more comprehensible pronunciation of sounds. The children became better at planning the sequence of movements necessary for the correct

formation of sounds. They demonstrated improved control over the rhythm and pace of speech, which enhanced the fluidity of transitions between sounds and syllables. With the enhancement of articulation skills, the time taken to find the appropriate articulatory position decreased, and the level of attention concentration during exercises increased. The quality of performance in diagnostic tasks such as “Hill”, “Straw”, “Smile”, and “Vowel Pronunciation” (in Ukrainian) significantly improved. In contrast, the results of the repeated assessment of oral motor skills in the control group did not reveal any significant changes (Fig. 4).

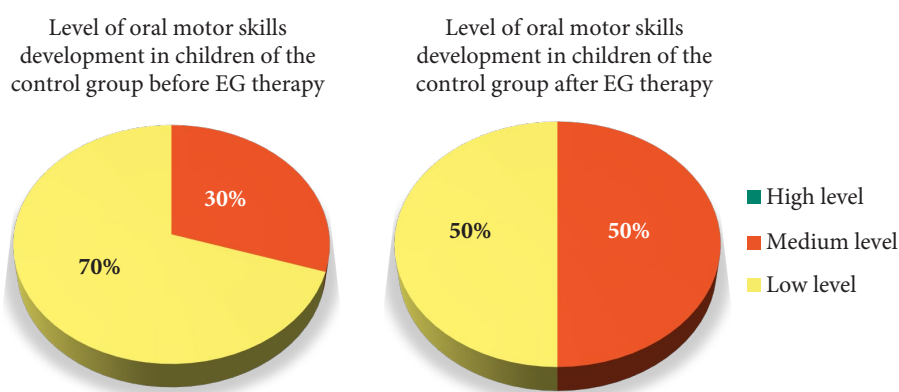


Figure 4. The level of oral motor skills development in preschool children with CAS (control group) before and after the therapy of the experimental group (EG)

Source: developed by the authors

There was a slight increase in the proportion of children demonstrating a medium level of oral motor skill development. Children showed improved performance on tests assessing oral motor skills, with a reduced need for time to find the correct position and more precise movements. This could be attributed to the fact that while these children received services according to the preschool's schedule, they did not receive therapy involving Playdough games. While progress was made, the rate of skill development was significantly slower compared to the experimental group, indicating that the control group was unable to acquire oral motor skills at the same pace within the same timeframe.

The research findings demonstrate that the proposed therapy using Playdough games has a positive impact on the development of both manual and oral motor skills in preschool children with CAS. Qualitative changes indicate a strengthening of the muscles in the fingers and articulatory organs (lower jaw, lips, and tongue); development of the ability to perceive the position of fingers and articulatory organs through proprioceptive sensitivity; improved quality and precision in targeted activities; enhanced coordination between fingers and articulatory organs during rhythmic sequences; improved planning and programming of hand movements and coarticulatory transitions between articulatory positions; increased speed and smoothness of manual and articulatory movements; and a reduction in delays and errors in the sequence of movements,

suggesting improved motor planning. These findings align with the research of J. Iuzzini-Seigel (2022), which revealed that children with CAS and speech sound disorders (SSD) exhibit weaknesses in motor skills tests involving balance, coordination, and precision. The common underlying issue that may explain difficulties with both speech and motor skills supports the conclusions regarding the need for integrated therapy approaches that simultaneously develop both speech and motor skills. This study further reinforces the importance of a comprehensive approach to developing these skills in children with CAS.

The results obtained demonstrate the positive impact of therapy using Playdough games on the development of manual and oral motor skills in preschool children with CAS. Comparing the aforementioned results (strengthening of finger and articulatory muscles, development of proprioceptive sensitivity, improvement in the quality and precision of targeted movements, and coordination between fingers and articulatory organs during rhythmic sequences, etc.) with existing research in the field of speech therapy, particularly the study of E. Maas *et al.* (2014), confirms the effectiveness of motor-based interventions for children with CAS. The study by E. Maas *et al.* (2014) highlights the importance of using the integrated stimulation approach DTTC, which has a strong evidence base for its effectiveness. The proposed approach using Playdough games, which also focuses on motor skills, supports these findings,

adding new dimensions to the development of proprioceptive sensitivity and coordination of movements, which are essential for successful articulation.

The findings of M. Grigos *et al.* (2024) also highlight the effectiveness of DTTC in improving speech sound accuracy in children with CAS, although they employed a different methodology. The participants demonstrated significant improvements in word accuracy following the intervention, consistent with the observations of improved coordination and proprioceptive sensitivity in this study. However, conducted research goes beyond focusing solely on language aspects, also addressing overall motor skill development, providing a more comprehensive approach to CAS therapy. The differences in approaches underscore the importance of using various methods to achieve optimal outcomes, considering the individual needs of each child. Consequently, the results obtained complement existing data on the effectiveness of motor interventions, providing new evidence that Playdough games can serve as a beneficial tool in CAS therapy. This expands the possibilities for integrating different approaches into clinical practice, aiming to optimise individualised treatment plans for children with CAS.

E. Maas *et al.* (2014) also highlight the necessity of applying motor learning principles in CAS therapy. The results obtained complement this data, as the use of Playdough games stimulates not only the physical aspects of motor skills but also the cognitive processes associated with planning and programming movements. This underscores the importance of integrating various aspects of motor learning to achieve optimal outcomes. E. Maas *et al.* (2014) also emphasise the importance of an individualised approach for each child, as there is significant variability in responses to different practice conditions. These findings suggest that therapy using Playdough games can be adapted to meet the individual needs of each child, thus providing a more personalised approach to therapy for children with CAS. It is for this reason that the preparatory stage involves studying each action individually, allowing for a personalised approach and error monitoring. Group work at the final stage enables the transfer of acquired skills to new situations and reinforces their performance, not only through self-monitoring but also by monitoring the performance of other children.

The results obtained indicate a significant improvement in manual and oral motor skills among older preschool children with childhood apraxia of speech (CAS) following therapy with plasticine games. In particular, there was a noted increase in the accuracy of completing tasks, as well as enhancements in the speed and fluidity of articulatory movements, along with improved coordination and intentionality of actions. These findings align with the DIVA/GODIVA model developed by H.E. Miller & F.H. Guenther (2021), which explains motor programming and speech apraxia through neurobiological and computational mechanisms. The DIVA/GODIVA model provides a profound understanding of how disruptions in speech-motor programming can occur due to damage to specific brain structures and the pathways between them. Specifically,

this model elucidates how deficits in the speech motor programme may lead to difficulties with the fluidity and accuracy of articulatory movements, as observed in children with CAS. The results demonstrate that therapy involving Playdough games can effectively strengthen these skills, as evidenced by a reduction in difficulties with coarticulatory transitions and an improvement in the fluidity of movements, ultimately contributing to enhanced overall speech production in children with childhood apraxia of speech.

In a study conducted by M.E. Vuolo & C. Wisler (2022), it was found that children with a history or current diagnosis of childhood apraxia of speech (CAS) exhibited deficits in manual rhythmic skills, similar to their speech deficits. Overall, this supports the hypothesis of the existence of domain-general cognitive mechanisms underlying rhythmic skill deficits in children with CAS. The current study complements this picture, demonstrating that the use of Playdough games contributes to improvements in both oral motor skills and manual skills in this group of children. A significant increase in task accuracy, improved coordination of movements, and a reduction in errors were observed in children who received therapy using Playdough games, highlighting its effectiveness.

The results obtained demonstrate the effectiveness of therapy using Playdough games in developing oral motor and manual skills in children with CAS. The significant improvement in accuracy, smoothness, and coordination of movements, observed in the experimental group, highlights the importance of integrating motor and cognitive aspects into the intervention process. Simultaneously, the stable results of the control group indicate the limited effectiveness of traditional intervention methods. Thus, the proposed approach can be recommended as an effective tool for comprehensive CAS therapy, complementing existing methods and expanding the possibilities for individualising intervention programs. This study underscores the need for further research and the practical implementation of Playdough games in working with children who have speech disorders, to improve their oral motor and manual skills.

CONCLUSIONS

The results of the experiment indicate positive changes in the development of manual and oral motor skills among children who participated in the therapy compared to those who did not receive such intervention. Children in the experimental group demonstrated a high level of proficiency in manual skills, exhibiting greater accuracy and concentration in their movements, along with a reduction in the number of errors and delays. Their movements became more differentiated, indicating an improvement in motor control. In terms of oral motor skills, the children in the experimental group showed higher accuracy and speed in executing articulatory movements, as well as a decrease in the number of errors. In the control group, such changes were only minimal, further confirming the effectiveness of Playdough games in developing these skills. The therapy incorporating Playdough games facilitated improvements

in both manual and oral motor skills among children with CAS, thereby confirming its efficacy. The obtained results underline the importance of developing these skills when working with speech disorders. The active use of Playdough games contributed to enhancing accuracy and concentration in children with CAS during motor programmes, enabling them to articulate sounds, words, and sentences more clearly, improve their communication skills, and boost their confidence in their communicative abilities.

The author's Playdough therapy is multifaceted as it takes a comprehensive approach to the development of a child with CAS, simultaneously impacting manual and oral praxis, which contributes to better coordination and motor skills. The playful nature of the therapy makes it interesting and engaging for children, increasing their motivation to learn and reducing age-related differences in motor development among children with CAS. This can be significant for inclusive practices in preschool institutions, where it is necessary to provide equal developmental opportunities for all children, regardless of their individual needs and characteristics. Due to its multifaceted nature, it saves both the child and the speech therapist's resources, while the simultaneous development of various skills in a child with CAS contributes to faster results. In the current conditions of resource scarcity, Playdough games are an accessible and easy-to-use tool not only for speech therapists but also for parents (or other adults) who have undergone

appropriate training. Thus, the multifaceted nature of the author's Playdough therapy makes it an effective, motivating, and flexible tool for developing motor and speech skills in children with CAS.

The study holds practical value, as the findings can be applied during therapy for preschool children with CAS in both special and inclusive educational institutions, thereby promoting the use of innovative methodologies in pedagogical practice. Therefore, the results obtained confirm the effectiveness of using Playdough games to develop manual and oral motor skills when working with children with speech disorders. This has significant implications for determining approaches to the diagnosis and therapy of children with CAS, as well as for further scientific research to expand the content of the methodology and its implementation in preschool institutions.

ACKNOWLEDGEMENTS

The administration and teaching staff of the Preschool educational institution No. 485 in Kyiv. Kyiv for creating a supportive environment for conducting the experimental research. The Faculty of Psychology, Social Work and Special Education of the Borys Grinchenko Kyiv Metropolitan University provided the opportunity to conduct this study.

CONFLICT OF INTEREST

None.

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Катерина Тичина

Кандидат психологічних наук, старший викладач
Київський столичний університет імені Бориса Грінченка
04053, вул. Бульварно-Кудрявська, 18/2, м. Київ, Україна
<https://orcid.org/0000-0002-3072-0450>

Наталія Бабич

Кандидат педагогічних наук, доцент
Київський столичний університет імені Бориса Грінченка
04053, вул. Бульварно-Кудрявська, 18/2, м. Київ, Україна
<https://orcid.org/0000-0001-8923-8960>

Євгенія Линдіна

Кандидат педагогічних наук, доцент
Бердянський державний педагогічний університет
69000, вул. Жуковського, 66, м. Запоріжжя, Україна
<https://orcid.org/0000-0002-4615-6807>

Олена Ревуцька

Кандидат педагогічних наук, доцент
Бердянський державний педагогічний університет
69000, вул. Жуковського, 66, м. Запоріжжя, Україна
<https://orcid.org/0000-0003-4311-4748>

Вплив Playdough games на розвиток орально-моторних навичок у дітей дошкільного віку із дитячою апраксією мовлення

Анотація. Актуальними викликами є застосування інноваційних підходів, які дозволяють зберігати ресурс логопеда і дитини, але разом з тим вирішувати декілька завдань логокорекційної роботи. Саме такий підхід використали автори статті для формування орально-моторних навичок, які мають вирішальне значення для розвитку мовлення дошкільників, особливо для дітей із дитячою апраксією мовлення. Метою роботи стала перевірка ефективності використання розробленої авторської терапії із застосуванням Playdough games в роботі з дошкільниками, які мають дитячу апраксію мовлення. Дослідження мало контрольований дизайн з повторними вимірами. Первинне логопедичне заключення CAS було сформульоване на основі клінічної оцінки. Порівняльне оцінювання двох обраних груп (контрольної та експериментальної) здійснювалося на основі розробленої методики діагностики стану сформованості manual and oral motor skills у дітей дошкільного віку до та після проведення авторської терапії із застосуванням Playdough games. Дослідниками у ході експерименту було виявлено, що систематичне використання, запропонованих ними авторських ігор з тістом позитивно вплинуло на розвиток рухових навичок у дітей з CAS. Діти експериментальної групи, які брали участь у терапії з Playdough games, продемонстрували значне покращення рухових навичок (як ручних, так і оральних), точності та зосередженості при виконанні рухів, підвищення точності та швидкості артикуляційних рухів. Знизилась кількість затримок та неправильного порядку рухів під час виконання послідовності рухів пальців. Діти потребували менше додаткового часу і значно рідше звертались по допомогу до логопеда, підвищилась вправність пальців рук та покращились їх диференціації під час виконання проб, що вказує на позитивний вплив використання в роботі тіста. Підвищились показники: перехід від однієї артикуляційної позиції до іншої, що допомагало дітям уникати труднощів з коартикуляційними переходами; планування послідовності рухів; плавності переходів між звуками та складами. Практичне значення роботи полягає в ефективності використання Playdough games для значного покращення орально-моторних навичок, точності рухів і концентрації у дітей з дитячою апраксією мовлення, що дозволяє зменшити потребу в додатковій допомозі логопеда

Ключові слова: ігри з пластиліном; порушення мовлення; моторні функції; ефективність; формувальна методика

UDC 159.98
DOI: 10.52534/msu-pp3.2024.61

Tetiana Yablonska*

Doctor of Psychology, Professor
Taras Shevchenko National University of Kyiv
01601, 60 Volodymyrska Str., Kyiv, Ukraine
<https://orcid.org/0000-0001-7272-9691>

Anastasia Shevchuk

Student
Taras Shevchenko National University of Kyiv
01601, 60 Volodymyrska Str., Kyiv, Ukraine
<https://orcid.org/0009-0005-5564-3200>

Ukrainian adaptation of the Clance Impostor Phenomenon Scale (CIPS)

Article's History:

Received: 15.06.2024
Revised: 07.09.2024
Accepted: 25.09.2024

Suggested Citation:

Yablonska, T., & Shevchuk, A. (2024). Ukrainian adaptation of the Clance Impostor Phenomenon Scale (CIPS). *Scientific Bulletin of Mukachevo State University. Series "Pedagogy and Psychology"*, 10(3), 61-71. doi: 10.52534/msu-pp3.2024.61.

Abstract. Expanding the methodological toolkit of research, particularly through adapting foreign psychometric tools, is crucial for Ukrainian psychology. This allows for conducting new research and comparing its results. One promising direction is studying the impostor phenomenon, manifested in an individual's doubts about their achievements. The Clance Impostor Phenomenon Scale, developed by foreign researchers, is used for this purpose. This study aimed to adapt the Clance Impostor Phenomenon Scale into Ukrainian. The Clance Impostor Phenomenon Scale was translated into Ukrainian by two psychologists using the back-translation method. The research sample consisted of 297 students aged 18 to 22 ($M = 20.4$, $SD = 1.49$), including 82 males and 215 females. Descriptive statistics, reliability analysis of scales, correlation analysis (Spearman's coefficient), and confirmatory factor analysis were used. The results of the study indicate a considerable degree of consistency between the obtained data and the foundational theoretical model. The assessment of content validity revealed a significant number of statistically significant correlations. A high level of test-retest reliability was identified for the adapted methodology. The resulting factor model is conceptually similar to the original; however, it is not identical. Other studies have also noted the emergence of new factor models, suggesting the potential for refinement of this methodology or reflecting age, temporal, and cross-cultural differences among the subjects studied. The evaluation of the psychometric characteristics of the Ukrainian version of the Clance Impostor Phenomenon Scale demonstrated high internal validity and reliability for the adapted tool. The Ukrainian version of the Clance Impostor Phenomenon Scale may be valuable for the psychodiagnosis of impostor syndrome manifestations and further standardisation and application in comparative research. The findings could contribute to optimising psychological support by taking into account the specific characteristics of impostor syndrome in the course of psychological work

Keywords: impostor syndrome; personality; self-esteem; perfectionism; luck; feelings of inferiority

*Corresponding author



INTRODUCTION

Psychological research into the impostor phenomenon in Ukraine is highly relevant due to the increasing pressure on workers in various fields, particularly during periods of economic and social instability, exacerbated by the full-scale invasion. Many professionals, especially young specialists, face heightened demands for their performance, leading to the development of impostor syndrome – a feeling of inadequacy and a fear of being exposed as incompetent. This self-doubt often results in decreased motivation, reduced productivity, and an increased risk of burnout, threatening not only career prospects but also the individual's psychological well-being.

In recent decades, the impostor phenomenon has gained significant attention in international psychological research. This psychological state is characterised by an individual's doubt about their achievements, coupled with a belief that their success is due to luck or deception rather than their own abilities. Contemporary research delves deeper into the factors contributing to impostor syndrome, such as perfectionism, self-esteem, gender, parenting style, and belonging to racial or social minorities (Bravata *et al.*, 2020; Yaffe, 2020b; Pannhausen *et al.*, 2022). A substantial portion of research focuses on manifestations of impostor syndrome among academics, particularly students, to understand its impact on academic performance and social adaptation, informing mental health professionals (Clark *et al.*, 2022; Şahin & Gülşen, 2022). The emergence of impostor syndrome is also linked to family factors, especially when an individual becomes the first in their family to achieve significant success, exceeding established expectations. Individuals who grew up in environments devoid of role models for professional or academic success may feel that their own achievements are random or unearned (Cawcutt *et al.*, 2021).

In professional settings, impostor syndrome can manifest in a discrepancy between objective measures of success, such as promotions, awards, or financial compensation, and an individual's subjective assessment of their work. Moreover, in professions dominated by one gender, individuals from the underrepresented gender often experience symptoms of impostor syndrome more frequently. For instance, women in male-dominated professions or men in female-dominated fields may feel additional pressure to prove their competence and meet professional standards, creating conditions conducive to impostor behaviour (Yaffe, 2020a). Some studies highlight higher rates

of impostor syndrome among women compared to men, which may be attributed to gender stereotypes, upbringing, and personality traits.

It is important to note that the issue of impostor syndrome is highly applicable, thereby opening avenues for exploring methods of prevention and overcoming its manifestations (Cutri *et al.*, 2021). It should be acknowledged that research on impostor syndrome by psychologists in Ukraine is relatively sparse. For instance, studies by I.R. Petrovska & S.I. Derevianna (2023) and A. Burova & A. Ivashchenko (2022) do not encompass all relevant issues. This situation is partly attributed to the lack of suitable psychodiagnostic tools for measuring this phenomenon. Consequently, given the current deficiency of domestic and adapted psychodiagnostic methodologies in the Ukrainian language, the adaptation of the Clance Impostor Phenomenon Scale (CIPS) into Ukrainian as a concise and user-friendly diagnostic tool is of significant interest. This adaptation will enable Ukrainian psychologists to investigate this complex personal phenomenon, facilitating comparative research and the planning and implementation of psychological support.

Research into impostor syndrome is essential for developing preventive measures to mitigate its development among young people and psychological interventions to support employees in overcoming its negative consequences. This will contribute to increased work efficiency and a better quality of life. Furthermore, disseminating information about impostor syndrome will raise awareness of emotional states and encourage individuals to seek necessary support to maintain their mental health. This study aimed to adapt the Clance Impostor Phenomenon Scale (CIPS) into Ukrainian, a tool used to diagnose manifestations of impostor syndrome.

MATERIALS AND METHODS

Permission was obtained from the author of the methodology, P. Clance, to conduct the adaptation of the Clance Impostor Phenomenon Scale (Clance, 1985) into Ukrainian. The adaptation process was carried out in two stages: the first involved linguistic adaptation of the questionnaire through a two-way translation by bilingual psychologists. Following this, a comparative expert assessment of the resulting English and Ukrainian versions of the questionnaire was conducted, leading to the finalisation of the Ukrainian version of the survey (Fig. 1).

Опитувальник **Clance Impostor Phenomenon Scale CIPS (Clance, 1985)**
(адаптація Т. Яблонська, А. Шевчук, 2024)

Інструкція: Для кожного питання оберіть варіант відповіді, яка найкраще відображає те, наскільки це твердження відповідає дійсності. Найкраще давати першу відповідь, яка спадає Вам на думку, а не розмірковувати довго над кожним твердженням.

	Твердження	Варіанти відповідей				
		1 зовсім не так	2 рідко	3 іноді	4 часто	5 дуже часто
1	Я часто досягав/досягала успіху в тестуванні чи виконанні завдань, навіть якщо до того, як взятись за них, я боявся/боялась, що не впораюся з ними.					
2	Я можу справляти враження, ніби я більш компетентний/компетентна, ніж я є насправді					
3	Я уникаю оцінювання, якщо це можливо, і мені дуже страшно, коли інші мене оцінюють					
4	Коли інші люди хвалять мене за щось, що я виконав/виконала, я боюся, що в майбутньому я не зможу виправдати їхні очікування.					
5	Іноді я думаю, що я здобув/здобула нинішній статус або успіх, тому що я опинився/опинилась в правильному місці та в правильний час або знав/знала правильних людей					
6	Мене лякає думка, що важливі для мене люди можуть дізнатись, що я не настільки здібний/здібна, як вони думають					
7	Я більше схильний/схильна запам'ятовувати випадки, в яких я не виклався/не виклалась на повну, ніж ті випадки, коли я зробив/зробила все можливе					
8	Я рідко виконую проект або завдання так добре, як хотілося б					
9	Іноді я вірю та відчуваю, що мій успіх в житті чи роботі є результатом якоїсь помилки					
10	Мені складно приймати компліменти чи похвалу щодо моїх знань чи досягнень					
11	Іноді я відчуваю, що мій успіх був результатом якогось везіння					
12	Часом я розчарований/розчарована своїми теперішніми досягненнями і думаю, що міг/могла би досягти набагато більш					
13	Іноді я боюся, що інші дізнаються, як багато знань чи здібностей мені насправді бракує					
14	Я часто боюся, що можу не впоратися з новим завданням або зобов'язанням, хоча загалом я добре вправляюсь з тим, за що беруся.					
15	Коли я досягаю успіху в чомусь і отримую визнання своїх досягнень, у мене виникають сумніви, чи зможу я повторити цей успіх.					
16	Якщо я отримую багато похвали і визнання за мої досягнення, я схильний/схильна применшувати важливість зробленого мною					
17	Я часто порівнюю свої здібності зі здібностями оточуючих і думаю, що вони можуть бути розумнішими за мене					
18	Я часто хвилююся, що не впораюся з проектом або іспитом, навіть якщо оточуючі переконані, що у мене все вийде					
19	Якщо я збираюся отримати підвищення або якоесь визнання, я не поспішаю розповідати про це іншим, допоки це не втілиться у реальність					
20	Я відчуваю себе погано і пригнічено, якщо я не «найкращий»/»найкраща» або, принаймні, «дуже особливий»/»дуже особлива» у ситуаціях, пов'язаних із досягненнями.					

Шкали

- **Удача:** 5, 9, 10, 11, 16
- **Несправжність та страх викриття:** 1, 2, 4, 6, 7, 12, 13, 14, 15, 17, 18, 19
- **Почуття меншовартості:** 3, 8, 20

Інтерпретація:

- якщо загальна кількість балів становить 40 або менше, то респондент має мало ознак синдрому самозванця;
- якщо сума балів від 41 до 60, респондент має помірний досвід синдрому самозванця;
- якщо сума балів від 61 до 80, респондент часто відчуває себе самозванцем;
- оцінка вище 80 означає, що респондент часто відчуває сильні переживання з приводу синдрому самозванця.

Чим вищий бал, тим більш вираженими є прояви синдрому самозванця і серйозніше феномен самозванця втручається в життя людини. Зазвичай сума балів за CIPS, менша за 40, означає відсутність синдрому самозванства, 40-59 – слабо виражений синдром, 60-79 – помірно виражений синдром, а більше 80 балів – сильно виражений синдром самозванця.

Figure 1. Ukrainian adaptation of the Clance Impostor Phenomenon Scale

Source: developed by the authors based on P.R. Clance (1985)

All questions in the questionnaire were presented to respondents in Ukrainian. The Ukrainian version of the CIPS also comprised 20 statements, to which respondents were required to respond using a Likert scale ranging from “1” to “5.” Specifically, the response options ranged from “1” (“not at all true”) to “5” (“very often true”). It was found that in this study, the internal consistency coefficient for the overall CIPS scale was $\alpha = 0.945$, with subscale coefficients ranging from $\alpha = 0.601$ to $\alpha = 0.888$, indicating a sufficiently high reliability of the methodology.

The variables in the study included the scales from the CIPS methodology (Clance, 1985), as well as the following instruments: the State-Trait Anxiety Inventory (STAI, Spielberger, 1970) as modified by Yu.L. Khanin (1976) (Agaev *et al.*, 2016), the Rosenberg Self-Esteem Scale (RSE, Rosenberg, 1967) adapted by the Ukrainian Institute of Cognitive Behavioural Therapy (2012), and the “Perfectionism” scale from the Measurement of Burnout questionnaire (Schaufeli, 2005) in the Ukrainian adaptation by L.M. Karamushka *et al.* (2022). The total sample comprised 297 individuals aged between 18 and 22 years ($M = 20.4$, $SD = 1.49$) who were studying at higher education institutions in Ukraine. Males constituted 27.6% of the sample, while females made up 72.4%. The research was conducted using Google Forms, with the survey distributed via links shared on social media and messaging platforms (Telegram, Viber). All ethical standards outlined in the Declaration of Helsinki (2013) were adhered to during the survey, and participants were informed about the purpose and principles of the research (confidentiality, voluntariness), as well as how their provided information would be utilised. Data collection occurred in two stages: participants completed the test, followed by a retest after 30 to 60 days. The survey was conducted from March to July 2024.

During the statistical analysis, the following software applications were utilised: the Jamovi statistical package version 2.3.28 and Microsoft Excel version 2010 for the preliminary processing of exported data. The methods employed included descriptive statistics (sample means, standard deviations), reliability analysis of the scales, correlation analysis (Spearman’s coefficient), and confirmatory factor analysis (CFA) to evaluate the effectiveness of the model formed by the specified structure of factors. Reliability was assessed using Cronbach’s model, calculating the coefficient of internal consistency α . Factor extraction was

performed using the principal component method with Varimax rotation, normalised according to Kaiser’s criteria.

RESULTS AND DISCUSSION

To analyse the psychometric properties and calculate reliability indices for the Ukrainian adaptation of the Clance Impostor Phenomenon Scale (Clance, 1985), descriptive statistics were calculated for each scale of the adapted measure. The data for each scale were as follows: for the “Luck” scale, $M = 2.73$, $SD = 0.975$; for the “Imposterism and fear of exposure” scale, $M = 2.75$, $SD = 0.999$; for the “Feeling of inferiority” scale, $M = 2.8$, $SD = 0.993$, where M represents the mean and SD represents the standard deviation.

In the next stage, Cronbach’s alpha coefficient for internal consistency was calculated for each of the scales of the adapted methodology. As is well known, the closer the coefficient value is to 1, the more consistent the scale is considered; an acceptable level of consistency is above 0.70, and the coefficient should not be lower than 0.50. Based on empirical data from the Ukrainian version of the methodology, the following Cronbach’s alpha coefficients were obtained: for the “Luck” scale, the coefficient was 0.806; for the “Imposterism and fear of exposure” scale – 0.601; and for the “Feelings of inferiority” scale – 0.888. Thus, the consistency coefficient values for the various scales either approach or exceed 0.7. The least consistent was the “Imposterism and fear of exposure” scale (0.601), while the most consistent was the “Feelings of inferiority” scale (0.888), indicating an acceptable level of internal consistency for the scales of the adapted methodology. When comparing these figures with data from other studies, it is notable that they are generally close to previously reported internal consistency measures. For example, the Hebrew version by Y. Yaffe (2020a) recorded an overall internal consistency coefficient for CIPS of $\alpha = 0.89$, with subscales ranging from $\alpha = 0.67 - 0.78$. Meanwhile, as noted by K.K.L. Mak *et al.* (2019) in their systematic review, various studies employing CIPS report some differences in psychometric indicators, although, in general, the internal consistency measures remain relatively high. A confirmatory factor analysis was conducted to test a three-factor model that served as the underlying structure of the questionnaire. The factor loadings are presented in Table 1, which shows that all factors of the adapted measure are quite well-aligned.

Table 1. Factor loadings from the confirmatory factor analysis of the Ukrainian version of the CIPS methodology

Factor loadings					
Factor	Indicator	Estimate	SE	Indicator	Estimate
Luck	Q5	0.844	0.076	11,070	<.001
	Q9	0.659	0.063	10,400	<.001
	Q10	0.984	0.075	13,220	<.001
	Q11	0.888	0.067	13,180	<.001
	Q16	0.880	0.068	12,920	<.001

Table 1. Continued

Factor loadings					
Factor	Indicator	Estimate	SE	Indicator	Estimate
Imposterism and fear of exposure	Q1	0.143	0.052	2,750	0.006
	Q2	0.341	0.061	5,640	<.001
	Q4	1,094	0.068	16,030	<.001
	Q6	0.986	0.068	14,460	<.001
	Q7	0.847	0.068	12,550	<.001
	Q12	0.857	0.064	13,330	<.001
	Q13	1,076	0.065	16,500	<.001
	Q14	0.895	0.060	15,000	<.001
	Q15	0.964	0.060	15,970	<.001
	Q17	0.956	0.065	14,720	<.001
	Q18	0.921	0.063	14,650	<.001
	Q19	0.299	0.070	4,270	<.001
Feeling of inferiority	Q3	0.898	0.070	12,910	<.001
	Q8	0.630	0.067	9,420	<.001
	Q20	0.726	0.074	9,850	<.001

Note: SE = standard error; Z = Fisher's criterion value; p = significance level. Based on P.R. Clance (1985)

Source: processing of empirical research data

Table 2 presents the factor covariances of the scales, while Table 3 shows the model fit indices. As indicated by the calculations, the correlated three-factor model, based on 20 questions, demonstrates moderate fit: the

comparative fit indices (CFI = 0.892, TLI = 0.878) are slightly below but close to 0.9, and the root mean square error of approximation (RMSEA) exceeds 0.05 but remains below 0.1.

Table 2. Factor covariance estimates from the confirmatory factor analysis of the scales in the Ukrainian version of the CIPS methodology

Factor covariance					
		Rate	SE	Z	p
Luck	Luck	1,000			
	Imposterism and fear of exposure	0.891	0.025	36,400	<.001
Imposterism and fear of exposure	Feeling of inferiority	0.887	0.046	19,300	<.001
	Imposterism and fear of exposure	1,000			
Feeling of inferiority	Feeling of inferiority	1,078	0.032	34,100	<.001
	Feeling of inferiority	1,000			

Source: processing of empirical research data, based on P.R. Clance (1985).

The test of the confirmatory factor model's fit to the original model revealed that the obtained indices – $\chi^2 = 480$, degrees of freedom (df) = 167, $p < .001$ – indicate an acceptable fit. However, further analysis shows that removing

question 16 significantly improves the psychometric indicators, resulting in a better-fitting model (Table 3). This suggests that some modifications to the methodology may be necessary, but this needs verification with a larger sample.

Table 3. Results of confirmatory factor analysis of the scales in the Ukrainian version of the CIPS methodology

Fit indices of the Ukrainian version of CIPS					
Fit indices			RMSEA 90%		
CFI	TLI	SRMR	RMSEA	Low	Upper

Table 3. Continued

Fit indices of the Ukrainian version of CIPS					
Fit indices				RMSEA 90%	
0.892	0.878	0.054	0.080	0.071	0.088
Fit indices with question 16 removed					
Fit indices				RMSEA 90%	
CFI	TLI	SRMR	RMSEA	Low	Upper
0.924	0.912	0.057	0.068	0.059	0.077

Note: based on P.R. Clance (1985). df: degrees of freedom; CFI: comparative fit index; TLI: Tucker-Lewis index; RMSEA (CI): root mean square error of approximation (95.0% confidence interval)

Source: processing of empirical research data

Thus, the analysis of Tables 2-3 suggests a satisfactory fit between the obtained data and the proposed factor structure. The three-component structure of the Impostor Phenomenon Score, as suggested by R. Clance, is confirmed, with distinct scales for “Luck”, “Imposterism and fear of exposure”, and “Feelings of inferiority”. At the same time, the model suggests that with certain modifications, the psychometric indicators of the methodology could be improved. In the next step, the questionnaire was tested for convergent validity. A correlational analysis was conducted between the scales of the CIPS questionnaire

(Clance, 1985) and other instruments used in the study, including the State-Trait Anxiety Inventory (STAI, Spielberger, 1970), Rosenberg Self-Esteem Scale (RSE, Rosenberg, 1967), and the “Perfectionism” scale (Measurement of Burnout, Schaufeli, 2005). Even though these methodologies are based on different theoretical models, their subscales align closely with the content of the adapted questionnaire’s scales. Table 4 presents the intercorrelation matrix of the overall score and individual scales of the impostor phenomenon syndrome with parameters of self-esteem, anxiety, and perfectionism, as measured in the study.

Table 4. Correlational analysis of the scales in the Ukrainian version of CIPS and the State-Trait Anxiety Inventory, Rosenberg Self-Esteem Scale, and “Perfectionism” Scale

Scales	Anxiety	Perfectionism	Self-esteem	Luck	Imposterism and fear of exposure	Feelings of inferiority
Anxiety	—					
Perfectionism	0.131	—				
Self-esteem	-0.211***	-0.176**	—			
Luck	0.490***	0.183**	-0.118*	—		
Imposterism and fear of exposure	0.619***	0.305***	-0.264***	0.755***	—	
Feelings of inferiority	0.573***	0.314***	-0.225***	0.616***	0.815***	—

Note: *p<.05, **p<.01, ***p<.001. Compiled based on CIPS methodology (Clance, 1985); State-Trait Anxiety Inventory (STAI, Spielberger, 1970); Rosenberg Self-Esteem Scale (RSE, Rosenberg, 1967); and the Measurement of Burnout scale, Schaufeli (2005)

Source: processing of empirical research data

Table 4 reveals that all scales of the Ukrainian version of the CIPS (Clance, 1985) exhibit more than one significant correlation with the scales of other instruments. Notably, there are moderate to strong correlations between all CIPS factors and the anxiety scale. For instance, the “Luck” scale (i.e. the tendency of an individual to attribute their successes to external factors such as luck) correlates with anxiety at a moderate level ($r = .49, p < .001$); “Imposterism and fear of exposure” correlates at a high level ($r = .619, p < .001$); and feelings of inferiority also correlate at a high level ($r = .573, p < .001$). This supports the theoretical assumptions made by many researchers that personal anxiety underpins the

impostor syndrome. The anxiety scale does not correlate with perfectionism ($r = .131, p < .05$), but it shows a weak correlation with self-esteem ($r = -.211, p < .001$), indicating that an anxious individual may not exhibit perfectionist traits, though they are likely to have low self-esteem. The measures of perfectionism and self-esteem exhibit weak correlations with CIPS factors, leading to the conclusion that anxiety has the most significant influence on the manifestations of the impostor phenomenon. The next phase of the research involved assessing the test-retest reliability of the Ukrainian version of the CIPS (Clance, 1985). In line with multiple recommendations, participants were invited

to retake the test one month after the initial testing. A total of 204 individuals completed the retest, of whom 55 were males (27%) and 149 were females (73%). Upon analysing the CIPS test and retest data, attention is drawn to the similarity in the overall scores (Table 5). As shown in Table 5, the mean overall score for the impostor syndrome scale was 58.2 for the initial test and 58 for the retest, with standard deviations of 16.1 and 17.1, respectively. Other

test and retest indicators presented in the table are also quite similar. Table 6 provides the correlation analysis between the test and retest scores. Notably, all correlations are statistically significant at the $p < .001$ level. Additionally, each of the three evaluated scales for the retest period has a correlation coefficient higher than 0.6, which is interpreted in psychological research as a strong direct correlation (Table 6).

Table 5. Mean test-retest scores for the overall CIPS impostor syndrome scale

Period	N	Mean	Median	Mode	SD	Minimum	Maximum
Test	297	58.2	58	60	16.1	22	97
Retest	204	58	57	51	17.1	20	100

Note: N – number of respondents; Mean – average score; Median – middle score; Mode – most frequent score; SD – standard deviation; Minimum – lowest value in the sample; Maximum – highest value in the sample. Compiled by the authors based on the methodology of P.R. Clance (1985)

Source: processing of empirical research data

Table 6. Paired test-retest correlations for the Ukrainian version of the CIPS

Pair	Scales	Spearman correlation coefficient
Pair 1	Luck & Luck 2	0.783
Pair 2	Imposterism and fear of exposure & Imposterism and fear of exposure 2	0.648
Pair 3	Feelings of inferiority & Feelings of inferiority 2	0.780

Source: processing of empirical research data, based on P.R. Clance (1985)

Based on the presented data, it can be concluded that the adapted methodology demonstrates a high level of test-retest reliability. The impostor syndrome was first described in the scientific psychological literature by P. Clance & S. Imes (1978). The researchers found that individuals who have achieved significant success often struggle to recognise their accomplishments and live in constant fear of being exposed as frauds. Despite clear evidence of their competence, these individuals are convinced that they are deceivers, occupying a position they do not deserve and attempting to claim unearned rewards. P. Clance & S. Imes (1978) argue that the impostor syndrome is an intense feeling experienced by high-achieving individuals who cannot internalise their success and attribute it to interpersonal skills or luck.

The signs of impostor syndrome, identified by J. Langford & P. Clance (1993), include perfectionism, a constant link between work and anxiety, fear of failure, and guilt over success. Experiencing impostor syndrome can lead to heightened anxiety and stress, as individuals continuously worry that their “lack of expertise” and “worthlessness” might be exposed. This behaviour negatively impacts both personal and professional development, as it limits an individual’s career progress. The Impostor Phenomenon Scale by P. Clance (1985) was designed to operationalise the concept that, while individuals are successful by external standards, they maintain the illusion of personal incompetence. The scale assesses key components of the Impostor Phenomenon, such as “Imposterism and fear of exposure”,

“Feelings of inferiority”, and “Luck” (Clance & Imes, 1978). The CIPS is the most commonly used self-report tool for measuring the intensity of impostor syndrome.

It is important to note that in contemporary research, only a few psychodiagnostic tools have been developed to measure the manifestations of impostor syndrome and assess their psychometric properties (Bravata *et al.*, 2020; Lee *et al.*, 2024). Among these instruments, the Harvey Impostor Phenomenon Scale (HIPS) (Harvey, 1981) stands out as a 14-item scale designed to measure the intensity of impostor syndrome in students and postgraduate researchers. The author argues that HIPS represents a homogenous theoretical construct, which is unidimensional, though its items are fairly heterogeneous – related to self-presentation, self-perception, attribution style, self-esteem, and situational amplifying effects. HIPS has demonstrated inconsistent psychometric properties across various studies, particularly regarding internal consistency, which ranges from $\alpha = 0.34$ to $\alpha = 0.70$ (Fujie, 2010). Researchers have raised concerns about the content homogeneity and factor structure (Mak *et al.*, 2019). Reports indicate a broad range of internal consistency results across different studies using HIPS, from $\alpha = 0.34$ to $\alpha = 0.85$, suggesting insufficient support for its psychometric properties.

Regarding the adapted scale by P. Clance (1985), many studies have reported high internal consistency for the CIPS, ranging from $\alpha = 0.85$ to $\alpha = 0.96$ (Mak *et al.*, 2019). P. Clance and several other researchers proposed a three-factor model for CIPS (French *et al.*, 2008; Brauer

& Wolf, 2016), comprising: 1) a sense of falseness ($\alpha = 0.84$), 2) downplaying achievements ($\alpha = 0.73$), and 3) attributing achievements to luck ($\alpha = 0.69$). Although CIPS demonstrates good internal consistency, evidence for the overall construct validity remains mixed, as do the findings regarding its factor structure.

The Perceived Fraudulence Scale (PFS). Following the definition of the impostor phenomenon as perceived fraudulence combined with cognitive and emotional components, J.Jr. Kolligian & R.J. Sternberg (1991) developed the PFS, which consists of 51 items, many of which overlap with the CIPS (Clance, 1985). However, this concept further emphasises the role of self-worth, impression management, and self-control. The PFS is defined as a measure that captures the multidimensional nature of the impostor phenomenon; nevertheless, its assessment retains a unidimensional overall score (despite the identification of two key factors: inauthenticity and self-denigration). Initial validation of the PFS revealed a two-factor model with an overall $\alpha = 0.94$ and factor reliabilities of $\alpha = 0.95$ (inauthenticity) and $\alpha = 0.85$ (self-denigration). Given the overlap of factors included in the CIPS, the correlation between the CIPS and PFS is high ($\alpha = 0.78$) (Chrisman *et al.*, 1995). However, evidence of the internal consistency of the PFS is mixed, ranging from $\alpha = 0.70$ to $\alpha = 0.83$ (Kolligian & Sternberg, 1991). Researchers note that the brevity of the CIPS offers greater utility compared to the PFS (Mak *et al.*, 2019).

In modern days, the CIPS is the most frequently used tool for measuring the impostor phenomenon in both research and clinical practice, although its factors (subscales) are difficult to isolate and clearly define (Mak *et al.*, 2019), and various studies reveal this inconsistency. For instance, in a study by S. Chrisman (1994), validation of the CIPS was carried out on a sample of Georgian university students. The CIPS scores showed moderate correlations, particularly with measures of depression, psychological well-being, social anxiety, self-esteem, and achievement scales. The Turkish adaptation of the CIPS was conducted by E. Şahin & F. Gülşen (2022). Results from the convergent validity analysis of the scales demonstrated a strong negative correlation between CIPS and self-esteem and a strong positive correlation between CIPS and trait anxiety. The Turkish version of the CIPS exhibited good psychometric properties, showing high test-retest reliability. At the same time, confirmatory factor analysis (CFA) revealed that a unidimensional model with 17 items was a better fit for this study compared to the three-factor model (Şahin & Gülşen, 2022).

Other adaptations of the CIPS, as evidenced by research analyses, show conflicting results regarding the questionnaire's factor structure (Mak *et al.*, 2019; Brauer & Proyer, 2023; Walker & Saklofske, 2023). For instance, K. Brauer & A. Wolf (2016), who conducted research on a sample of German adults, found that the scale comprises two dimensions. Y. Yaffe (2020a), in adapting the scale into Hebrew, discovered four dimensions among Hebrew-speaking women. M. Simon & Y.J. Choi (2018) concluded that a one-factor model with correlated residuals

best explains the factor structure of the CIPS. Therefore, the scale may not be sensitive enough to distinguish between the factors of the construct. In the Ukrainian adaptation of the CIPS, differences in the factor structure also draw attention. While the factor structure of the questionnaire was confirmed through confirmatory factor analysis, exploratory factor analysis initially indicated the presence of two factors. Given the gender imbalance in the study sample and the significant gender differences observed, it should be noted that refining the factor structure of the Ukrainian version of the CIPS remains an area for future research.

As a psychological phenomenon, impostor syndrome can be viewed from various angles, including its causes, specific symptoms, and consequences. It is most commonly associated with perfectionism and low self-esteem. Individuals with reduced self-esteem often underestimate their abilities and achievements, feeling that they are not as intelligent, talented, or successful as others. However, findings on the relationship between self-esteem and impostor fears are somewhat conflicting. For instance, J.C. Harvey (1981) found a weak correlation between impostor syndrome, self-esteem, and self-control. Conversely, several other studies indicate that impostor syndrome is linked to low self-esteem (Chrisman, 1995; Clance & O'Toole, 2014), and C. Cozzarelli & B. Major (1990) suggest that the syndrome may be more accurately considered as an extension of general low self-esteem rather than an independent construct.

Contemporary studies suggest that the impostor phenomenon is inversely related to academic and career success, mental and physical health, self-esteem, and emotional intelligence. Numerous investigations highlight the prevalence of the impostor phenomenon among students, the academic community at large, and particularly among women. For instance, C.M. Chrisman *et al.* (1995) measured various factors such as mood, symptoms of depression, fear of negative evaluation, self-esteem, self-criticism, self-control, and feelings of imposterism in students. The findings revealed that impostor syndrome is associated with experiencing depressive symptoms, self-criticism, negative thoughts and emotions, fear of negative evaluation, doubts about one's abilities, and low self-esteem. Research also indicates that impostor syndrome scores are higher among students from ethnic or racial minority groups (Cokley *et al.*, 2013).

The most prominent characteristics of individuals with impostor syndrome are their inability to acknowledge their achievements, feelings of self-doubt, and a tendency to attribute success to external factors (Clance & Imes, 1978). Such individuals live in constant fear that their perceived fraudulence will eventually be uncovered, revealing that they do not belong in their professional environment. This persistent fear of being exposed leads to psychological consequences such as depression, stress, anxiety, and low self-esteem (Cusack *et al.*, 2013). Students and academics with impostor syndrome typically experience heightened fear and anxiety regarding their work (Sonnak & Towell, 2001). They expend significant energy hiding their perceived inadequacy, often overworking and adopting

avoidance strategies, which results in low job satisfaction and a higher risk of burnout (Hutchins, 2015). Similar findings were observed in the adapted Ukrainian version of the scale among a sample of Ukrainian students. The connections identified by the authors between impostor syndrome, anxiety, and low self-esteem align with other research, which found links between impostor syndrome and self-esteem (Yaffe, 2020b), fear of evaluation (Clance & O'Toole, 2014), and perfectionism (Pannhausen *et al.*, 2022).

Thus, impostor syndrome is a relatively common phenomenon, particularly among members of the academic community, correlating with personal anxiety, low self-esteem, uncertainty regarding one's achievements, and burnout in the workplace or during study. Most contemporary research on this phenomenon also highlights discrepancies in the prevalence of the syndrome between men and women. Comparisons of the psychometric indicators and factor structures of the Ukrainian adaptation with both the original and adaptations in other languages reveal that the adapted versions meet the psychometric requirements, particularly concerning internal consistency and convergent validity. However, the factor structure of the questionnaire does not always align with the original structure.

CONCLUSIONS

The results obtained from the adaptation of the CIPS into Ukrainian provide sufficient grounds to assert the internal validity and reliability of the Ukrainian version of the instrument. Specifically, the internal consistency coefficients for the scales were as follows: for the "Luck" scale, Cronbach's alpha was 0.806; for the "Imposterism and fear of exposure" scale, it was 0.601; and for the "Feelings of inferiority" scale, it was 0.888. A confirmatory factor analysis of the three-factor baseline model of the questionnaire demonstrated that the obtained data corresponded to the

specified factor structure, confirming a three-component structure comprising the scales of "Luck", "Imposterism and fear of exposure", and "Feelings of inferiority". Simultaneously, the modelling indicates that certain modifications could enhance the psychometric indicators of the instrument. The assessment of convergent validity also yielded satisfactory results, revealing moderate to strong correlations between all CIPS factors and the anxiety scale, as well as weaker associations with the self-esteem and perfectionism scales. This supports theoretical assumptions regarding the central role of personal anxiety in the development of impostor syndrome. The test-retest data indicated a high level of test-retest reliability for the Ukrainian version of the CIPS questionnaire.

Thus, it can be asserted that the Ukrainian version of the CIPS instrument meets the requirements for the psychometric characteristics of psychodiagnostic tools and can be utilised in research to measure the level of manifestations of impostor syndrome in individuals. One limitation of the study is that the sample was not balanced in terms of gender, which is important for clarifying the factor structure of the questionnaire. A prospective area for further research includes refining the factor structure of the instrument through studies conducted on a larger sample, as well as examining cultural and gender differences in the manifestation of impostor syndrome.

ACKNOWLEDGEMENTS

The authors express their gratitude to Pauline Clance for granting permission to use the Clance Impostor Phenomenon Scale (Clance, 1985) for the Ukrainian adaptation of the instrument.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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Тетяна Яблонська

Доктор психологічних наук, професор
Київський національний університет імені Тараса Шевченка
01601, вул. Володимирська, 60, м. Київ, Україна
<https://orcid.org/0000-0001-7272-9691>

Анастасія Шевчук

Студент
Київський національний університет імені Тараса Шевченка
01601, вул. Володимирська, 60, м. Київ, Україна
<https://orcid.org/0009-0005-5564-3200>

Українська адаптація опитувальника Clance Impostor Phenomenon Scale (CIPS)

Анотація. Розширення методичного інструментарію досліджень, зокрема через адаптацію зарубіжних психодіагностичних методик, є важливим для української психології. Це дозволить проводити нові дослідження та порівнювати їх результати. Одним із перспективних напрямків є вивчення синдрому самозванця, який проявляється у сумнівах індивіда щодо своїх досягнень. Для цього застосовується Clance Impostor Phenomenon Scale, розроблена зарубіжними дослідниками. Мета роботи полягала в адаптації психодіагностичного опитувальника Clance Impostor Phenomenon Scale українською мовою. Опитувальник Clance Impostor Phenomenon Scale було перекладено українською мовою двома психологами за методом зворотного перекладу. Вибірку дослідження склали 297 студентів віком від 18 до 22 років ($M = 20.4$, $SD = 1.49$), серед них чоловіків – 82 особи, жінок – 215 осіб. Використано методи описової статистики, аналізу надійності шкал, кореляційного аналізу (коефіцієнт Спірмана), конфірматорний факторний аналіз. Результати дослідження свідчать про досить хорошу узгодженість отриманих даних із базовою теоретичною моделлю. Перевірка змістової валідності показала значну кількість статистично значущих кореляцій. Виявлено високий рівень тест-ретестової надійності методики, яка адаптувалася. Отримана факторна модель є близькою за змістом до оригінальної, проте неідентичною; інші дослідження також вказують на отримані нові факторні моделі, що свідчить про можливість удосконалення даної методики або ж вікові, часові і крос-культурні відмінності досліджуваних. Перевірка психометричних характеристик української версії методики Clance Impostor Phenomenon Scale показала високу внутрішню валідність і надійність адаптованої методики. Українська версія методики Clance Impostor Phenomenon Scale може бути корисною для психодіагностики проявів синдрому самозванця, а також для подальшої стандартизації та використання в порівняльних дослідженнях. Результати можуть сприяти оптимізації психологічної допомоги, враховуючи особливості синдрому самозванця у процесі психологічної роботи

Ключові слова: синдром самозванця; особистість; самооцінка; перфекціонізм; удача; почуття меншовартості

UDC 159.942:004.738.5

DOI: 10.52534/msu-pp3.2024.72

Lifen Jiang*

Doctor of Philosophy

Chiang Mai University

50200, 239 Huay Kaew Rd., Chiang Mai, Thailand

<https://orcid.org/0009-0001-3444-5126>

Piang-or Loahavilai

Doctor of Philosophy

Chiang Mai University

50200, 239 Huay Kaew Rd., Chiang Mai, Thailand

<https://orcid.org/0000-0001-7970-8252>

Piyachat Udomwong

Doctor of Philosophy

Chiang Mai University

50200, 239 Huay Kaew Rd., Chiang Mai, Thailand

<https://orcid.org/0000-0002-3915-6411>

Study of the influence of psychological factors on women's purchasing decisions during e-commerce livestream

Article's History:

Received: 12.05.2024

Revised: 19.08.2024

Accepted: 25.09.2024

Suggested Citation:

Jiang, L., Loahavilai, P., & Udomwong, P. (2024). Study of the influence of psychological factors on women's purchasing decisions during e-commerce livestream. *Scientific Bulletin of Mukachevo State University. Series: "Pedagogy and Psychology"*, 10(3), 72-84. doi: 10.52534/msu-pp3.2024.72.

Abstract. Apart from YouTube and Instagram, new e-commerce live streaming platforms have emerged (TikTok Shopping, Amazon Live), which opens new opportunities for engaging with the audience and driving sales. Women, looking for an emotional and interactive experience, tend to make impulse purchases during live broadcasts. That is why it is necessary to investigate this topic. The purpose of this study was to examine the psychological factors that influence women's impulse purchases while watching live broadcasts and to determine the psychological characteristics of women who make impulse purchases during live broadcasts. The study included questionnaires and interviews with women living in the Philippines, East Timor, Thailand, Singapore, Myanmar, Malaysia, and Laos. The key findings are that the study revealed the psychological factors of influence and psychological characteristics of women as they make purchases during e-commerce live streams. Psychological characteristics include emotionality while watching (68.3% of respondents), fear of missing out on a good deal (58.3% of respondents) and being influenced by other viewers and streamers (74.2% trust recommendations). Psychological factors include a set of technological and social components. Technological factors include interactivity and real-time communication (56.7% consider it significant); visual appeal and product display (71.7% consider it significant); and the convenience of shopping while browsing. Social factors include parasocial interaction with the streamer, a sense of community with other viewers (63.3%). The study also identified the role of hosts, which plays a significant role in building trust in the product and online platform: building trust in the product and brand (74.2% trust recommendations); influence through charisma, expertise, and attractiveness (62.5% consider them attractive, 58.3% – competent). Live broadcasts effectively stimulate impulse purchases

*Corresponding author



among women. Emotions, trust, and social influence play a key role in this process. The practical significance of this study lies in the possibility of helping women to better understand the factors that influence impulse purchases, to avoid the influence of emotional stimuli and social pressure. The findings of this study can be used to develop recommendations on how people can effectively shop online

Keywords: impulsive spending; consumer psychology; emotions; social influence; trust; deepfake

INTRODUCTION

Live streaming has become an integral part of online shopping, especially for women. Therefore, women need an understanding of the psychological factors that influence their purchasing decisions during live broadcasts. Understanding these mechanisms can bring more awareness and protect the female audience from manipulation. Furthermore, research on this topic will help companies create broadcasts and offers that meet the individual needs and preferences of the female audience. On the other hand, if this topic is not explored, women will make purchases less consciously, which can lead to negative emotions after the purchase. The present study is relevant because it can influence how this format will be developed in the future, making it more focused on the needs and interests of the female audience.

Research shows that the influence of emotions on consumers' intention to buy during e-commerce live streams is important. L. Meng *et al.* (2021) note that emotional trust and perceived emotional value are key mediators in the influence of various factors on purchase intention. These factors include the popularity of online celebrities, homogeneity (similarity between the consumer and the presenter), product features, promotions, and the atmosphere during the live broadcast. Emotional trust and perceived emotional value fully mediate the effects of product and atmosphere, and partially mediate the effects of homogeneity and promotions. At the same time, R.Z. Morteza *et al.* (2023) note that to activate emotional states in consumers, retailers should facilitate experiences. It is necessary to optimise the purchase process so that the consumer enjoys it, which is becoming a key factor in building loyalty. Retailers should focus on creating a positive emotional experience for consumers to gain their loyalty.

Y.K. Ifs & P. Hongal (2024) noted that it is important that buyers should perceive positively a product presentation that includes a clear and relevant product for this audience and an influential broadcast presenter. C. Yu (2023) showed that there is a certain pattern in how the emotional manifestations of the seller affect sales during the presentation of the product. At the beginning and end of a presentation, emotions can be more effective because they grab the audience's attention and help build rapport. However, excessive emotion in the middle of a presentation can irritate viewers and negatively impact their purchase decisions. Therefore, the best strategy is to reduce emotional

displays in the middle of the presentation and focus on product information. A. Basit *et al.* (2024) confirmed that women are more likely to be emotionally involved in shopping than men and are prone to compulsive behaviour in this area. Notably, the role of customer trust in the seller or its employees has a considerable impact on the decision to make a purchase. W. Yan (2023) showed that positive physical and emotional experiences gained from customers' perceptions of a product can trigger positive behaviour and become the basis for trust, which is a significant factor in creating and strengthening relationships based on a cycle of guarantees and the performance of these guarantees and obligations. X. Pan (2023) identified that increasing consumer trust in a brand and product is possible through presenters demonstrating their expertise and knowledge. This can lead to an increase in impulse purchases, as consumers feel more confident in their choices after receiving additional information from the presenter.

Summarising the cited studies in the field of online shopping, aspects that are till understudied were identified. One aspect is the extrapolation of these findings to consider the gender of consumers. It is precisely the gender aspect that can provide more insight into the context of emotional impact during a product presentation. The next aspect that should be highlighted is the identification and outlining of triggers that lead to emotional shopping. Therewith, one should not forget about the level of customer trust and how it affects the purchase decision, whether the presenter's expertise and knowledge influence the consumer's choice. It is also important to include the age aspect of consumers in the analysis. All these ideas became the basis for setting the goal and objectives of this study.

The purpose of this study was to investigate the psychological factors that influence women's impulse purchases during live e-commerce broadcasts in Thailand. To fulfil this purpose, the study set and completed the following objectives: to identify the key psychological characteristics of the female audience prone to impulse purchases during live broadcasts; to investigate how online shopping experience, frequency of purchases, age, and number of platforms used contribute to impulse purchases; to analyse the role of live broadcast hosts in building trust in products and online platforms; to identify what psychological triggers are used to push women to impulse purchases during live broadcasts.

The following hypotheses were put forward in the study:

H1. The credibility and attractiveness of the presenter positively influence the perceived pleasure of watching the broadcast, which leads to impulse purchases.

H2. The emotional impact of live broadcasts (excitement, pleasure) contributes to impulse purchases.

H3. Psychological factors (emotional arousal, fear of missing out on a favourable offer, social influence) influence women's impulse purchases.

LITERATURE REVIEW

Live streaming is changing e-commerce buying decisions by focusing on Live Streaming Commerce (LSC). LSC is an e-commerce service where sellers communicate with consumers through live streaming, while consumers can place orders in the same system (Wang *et al.*, 2022). Compared to conventional commerce and social commerce, live commerce is considerably improved in terms of interactivity, visualisation, entertainment, and professionalization. Notably, this was facilitated by the COVID-19 pandemic (Ma *et al.*, 2022; Tan, 2023).

In the pursuit of visual appeal, it is important for content creators to be mindful when using deepfake technology, which synthesizes human images using artificial intelligence. While deepfake technology has the potential to create highly realistic video and audio, it also introduces complexities in how we perceive reality. The psychological impact of deepfakes is multifaceted, and its implications for individuals and society should be carefully considered (Qureshi & Khan, 2024). But on the other hand, such an innovative component of live streaming as augmented reality considerably improves the shopping experience. Augmented reality offers benefits such as enhanced product visualisation, virtual try-on, and enhanced customer engagement that build trust and reduce purchase uncertainty (Chodak, 2024). In addition, Q.-M. Ying & K.-R. Kim (2022) proved that the higher the service and interactivity of the live streaming function, the higher the consumer's purchase intention and relevance.

Deepfakes, according to Y. Chen (2024), can present significant business opportunities for brands looking to engage their target audiences in innovative ways and reduce marketing costs. Deepfake technology allows firms to create convincing but fake media, such as videos and images, by digitally manipulating a person's likeness. This can be used to extend the reach of influencer marketing campaigns, showcase products on models with different characteristics, and create personalized ads. However, the use of deepfakes in advertising also raises legal considerations around intellectual property rights, advertising rules, and consumer trust. At the same time, H.A.D.M. Arachchi & G.D. Samarasinghe (2024) suggest that creative AI technologies, such as deepfakes and generative adversarial networks, can be used to make and edit audio and video material in advertising in new ways, leading to positive consequences in the minds of target consumers. L. Whittaker *et al.* (2021), in turn, define deepfakes as

digital content created via machine learning and artificial intelligence technology that is generating interest among marketers and the general population, though often portrayed as a "phantom menace" in the media. The authors argue for a balance (i.e., situations where all stakeholders benefit) and see the development of "deep fakes" as a "new hope" for marketing.

R. Zhou & L. Tong (2022) showed that emotional trust and perceived emotional value are key mediators in the influence of factors on purchase intention. Specifically, emotional trust and perceived emotional value fully mediate the effects of product and atmosphere, and partially mediate the effects of homogeneity and promotions. L. Li *et al.* (2024) and Y. Wang (2024) found that the similarity, attractiveness, professionalism, and interactivity of presenters have a positive impact on consumer emotions. The attractiveness of the presenters has the greatest positive impact on consumer satisfaction, followed by likability, professionalism, and interactivity. However, a prominent level of viewer engagement can reduce the impact of similarity and attractiveness of the hosts on consumer satisfaction. On the other hand, there are studies that show that trust, professionalism, interactivity, and attractiveness of e-commerce sites have a considerable positive impact on the value perceived by customers and the customer flow experience. The value perceived by customers and the customer flow experience have a positive impact on the stable retention of customers in live broadcast rooms. Furthermore, these factors act as mediators between the characteristics of e-commerce anchors and sustainable customer retention (Qi & Xiaoli, 2024).

Studies by G.R. Lakhan *et al.* (2021) and H. Li *et al.* (2023) investigated the formation of consumer intentions for live e-commerce purchases. The research data support the conclusion that engaging opinion leaders and adding entertainment content to product presentations drives more purchases during live streaming. The factors that X. Pan (2023) identified in his study that:

- influence the purchase decision are product quality;
- qualifications and abilities of the hosts;
- pricing policy;
- bilingual way of selling goods;
- combination of sales with lectures during live broadcasts;
- brand trust.

W.H. Li *et al.* (2024) took a different approach to the factors of influence, suggesting that the factors influencing the purchase decision during live broadcasts include positive characteristics of the hosts; active interaction between customers during live broadcasts; high level of trust in the brand and the host; clear and straightforward product value. R. Xu & B. Ding (2023) found that the factors that influence consumers' purchase intention are the host's professionalism, product content (quality, certification), the atmosphere of the living room stage, and the third-party warranty and service (logistics service).

Y. Huang & L. Suo (2021) examined the factors influencing Chinese consumers' impulsive purchasing decisions

during e-commerce live streams. Four main factors were considered: price promotions, time pressure, interpersonal interaction, and visual appeal. The findings of the cited study showed that all the above factors have a considerable positive impact on impulsive buying decisions. Specifically, price promotions and visual appeal were the key factors. Factors that trigger impulsive consumer buying behaviour during e-commerce livestreams include marketing incentives (discounts for a promotion), scenarios (interaction with an anchor), and individual characteristics (positive emotions) (Sun, 2020). Notably, if the customer believes that the product is excellent value for money, this can evoke positive emotions and increase brand trust, which ultimately leads to a purchase.

It is important to understand customer psychology and use the S-O-R (stimulus-organism-response) theory to analyse the impact of live streaming on impulsive buying decisions. The theory suggests that external stimuli, such as visual content, interaction with the streamer, and comments from other viewers, trigger emotional and cognitive reactions in consumers, which influence their behaviour and purchase decisions (Min & Tan, 2022; Cai & Lan, 2024). X. Xu *et al.* (2020) show that consumer psychology, on which sales promotion during live broadcasts is based, is driven by an emotional component, cognitive processes, and parasocial interaction.

MATERIALS AND METHODS

The study was conducted through questionnaires and interviews. The questionnaires were distributed among the participants of the online broadcasts, among female representatives, regardless of age, income, education, and profession. A total of 554 questionnaires were collected, of which 154 were used for pilot testing and 400 – for the main study. The sample size ($n = 554$) was determined using the general statistical formula of z -value with a confidence level of 95% ($z = 1.96$) and a maximum margin of error of 5% ($E = 0.05$):

$$n = \frac{z^2 * (p) * (1-p)}{E^2} = \frac{1.96^2 * (0.5) * (1-0.5)}{0.05^2} = 400, \quad (1)$$

where: p – the probability of an event (in this case, a purchase while watching a live broadcast), which is assumed to be 0.5 for the maximum sample size.

The questionnaire was developed based on existing research and adapted to the context of the study. The respondents were women living in the Philippines, East Timor, Thailand, Singapore, Myanmar, Malaysia, and Laos. The questionnaire included questions about demographic data (age, income, education, place of residence); questions about the experience of online shopping and watching live broadcasts; questions about the perception of live broadcasts as a way of shopping (emotions, trust, purchase intention); questions about the influence of various factors on the perception of live broadcasts (host, content, prices, discounts). All variables were assessed on a 5-point Likert scale. Pilot testing was conducted to verify the reliability and validity of the questionnaire.

Age distribution:

- 18-24 years (25%) – young women actively use social media and mobile applications, which makes them prone to watching live broadcasts and impulse purchases;
- 25-34 years (35%) – the largest group of young professionals and young mothers. They are interested in a variety of products and services offered during live broadcasts;
- 35-44 years (25%) – a group of women who tend to have stable incomes and families. They are looking for quality products and convenient ways to shop that offer live streaming;
- 45-54 years (10%) – a group that is less active in online shopping, but some women in this age group may be interested in live streaming, especially for health and beauty products;
- 55+ years (5%) is the group least active in online shopping, but some women may use live broadcasts for socialising and sometimes for shopping.

Breakdown by income level:

- below average (15%) – the group is interested in live broadcasts that offer discounts and affordable products;
- average (40%) – the largest group that has enough money to make regular purchases during live broadcasts;
- above average (30%) – the group that is looking for quality and branded products that are often offered during live broadcasts;
- high (15%) – the group is interested in exclusive products and personalised offers during live broadcasts.

SPSS 22.0 software was used to analyse the data. Descriptive statistical analysis, regression analysis, and mediation test were conducted. This approach reveals a connection between the characteristics of online celebrities, the atmosphere of the live broadcast, perceived emotional value, and consumer purchase intent.

The second stage of the study included an experiment (to test hypothesis H1) and interviews (to test hypotheses H2 and H3) and was conducted with the participation of 100 women who make online purchases. The format was voice calls via WeChat. The experiment involved dividing respondents into two groups (experimental and control). The conditions of the experiment included participants in the two groups were familiarised with the study and agreed to take part; participants in the experimental group watched the broadcast with an unfamiliar presenter; participants in the control group watched the broadcast with a familiar presenter. After watching the broadcast, all participants answered a questionnaire, which included questions about the presenter's credibility and attractiveness (Do you know the presenter of this broadcast? Do you believe the presenter's recommendations? Do you find the presenter attractive? How would you rate your level of satisfaction with watching this broadcast? Have you made a purchase of the product presented in this broadcast? How would you rate your attitude towards this e-commerce platform?). Comparison of the results of the two groups using statistical methods.

The interview included questions about:

- the emotional impact of live broadcasts (What emotions do you experience when watching live broadcasts? Do

you make impulsive purchases under the influence of the broadcast atmosphere? What factors contribute to the fact that you make impulsive purchases during live broadcasts?);

- psychological factors (What psychological factors influence your purchase decision during live broadcasts? Do you feel afraid of missing a good deal during live broadcasts? Do you pay attention to the comments and reactions of other viewers during the broadcast? Do you trust the hosts' recommendations?). The study followed all provisions of the Declaration of Helsinki (2013). All survey participants were informed that the information they provided would be used to create a study and subsequently publish its findings.

RESULTS

The e-commerce space has seen live streaming become an integral part of the buying process, and consumer expectations have risen considerably. Specifically, the female part of the audience wants more than just convenience in online shopping. The audience expects an exciting, innovative, and personalised shopping experience. A personalised shopping experience means that live stream hosts interact directly with consumers, offering individually tailored content, and creating an intuitive shopping experience. Consumers can interact with the hosts in real time, ask questions, get technical clarification, and take part in conversations. This personalised approach strengthens the connection between the customer and the presenter, which leads to increased trust and a higher probability of purchase.

Thus, a personalised shopping experience implies that presenters understand the needs and preferences of their viewers. They can use this information to recommend products that are likely to appeal to consumers and create a more engaging and enjoyable shopping experience. Personalised content for a female audience should have three aspects: it should be engaging, innovative, and feature celebrities or experts relevant to the female audience as hosts. E-commerce content creators need to create engaging content. Women are no longer satisfied with static product presentations. They crave dynamic, interactive content that captures their attention and evokes an emotional response. This can include live product demonstrations, unboxings, reviews, and even entertainment segments that make the live stream interesting and engaging. It is also worth paying attention to innovation and modify live broadcasts dynamically according to the trends of interesting content for the female audience. As live streaming becomes increasingly popular, consumers are constantly looking for new and innovative formats. This can include using augmented reality (AR) technology for virtual clothing try-on, interactive polls and games, and collaborating with influencers or experts to provide unique insights.

Women consumers appreciate a personalised approach. They want to feel that the live streamers understand their individual needs and preferences. This can be achieved by recommending products based on previous purchases or interests, addressing viewers by name, and creating a sense of community during the live stream. A

personalised shopping experience not only satisfies consumer desires but is crucial to the success of e-commerce platforms. When women feel valued and heard, they are more likely to return to live streams, trust the hosts' recommendations, and ultimately make purchases. One notable effect of deepfakes is the potential impact on trust in information. As deepfake technology becomes more advanced, distinguishing between genuine and fabricated media can become challenging. This may lead to increased scepticism about the authenticity of various video and audio content. Such scepticism could contribute to a broader climate of uncertainty, affecting how people perceive and interpret information and potentially impacting public discourse. Additionally, deepfakes have the ability to influence emotions and perceptions by depicting individuals in scenarios they have never experienced, which can lead to misunderstandings and misconceptions. When deepfakes involve public figures, they can sway public opinion and affect reputations and mental well-being. In the realm of online commerce, it's important to address how deepfakes might influence consumer trust in hosts, products, or companies, potentially affecting sales dynamics.

The following factors influence the intention of the female audience to purchase a product during a live broadcast: homogeneity, promotions, product, and atmosphere. Homogeneity is defined as the consumer's perception of similarities between themselves and the live stream host (e.g., shared interests, values, demographic characteristics). Promotions work through incentives to act by creating unique offers that have certain restrictions. Targeting the female audience through various incentives and offers used to encourage purchases during live streaming (e.g., discounts, gifts, limited offers) can help boost sales. There-with, the product should be interesting and of high quality, meeting the preferences of the target audience. Finally, the most influential factor that influences women to make purchases during live streams is the overall feeling or mood created during the live stream, including visuals, music, audience interaction. However, the impact of these factors on purchase intention is indirect. It is mediated by two key emotional factors: emotional trust (the feeling of trust and connection that the consumer develops towards the live stream host) and perceived emotional value (the consumer's perception that the product or service promoted during the live stream can evoke positive emotions or satisfy emotional needs). In other words, if the product and atmosphere do not evoke positive emotions and build trust, they will not influence the consumer's desire to buy the product.

In the context of the present study, it is necessary to highlight the key psychological factors that influence women during live shopping. These include the emotional factor, trust and authority, and practical aspects. The emotional factor is reflected in the excitement and satisfaction of viewers during the live broadcast, in the fear of missing benefits, in increased communication with other live viewers. The atmosphere of a live broadcast can be dynamic and exciting, creating emotional excitement and a sense of satisfaction. This can lead to impulsive purchases. Fear of

missing out (FOMO) is created by offering limited-time deals, exclusive discounts, and an artificial sense of urgency, which are often used during live events. They can cause fear of missing out on a profitable purchase. These conditions encourage women to make impulsive purchases to avoid missing out on a “bargain”. The comments and reactions of other viewers, as well as the hosts’ recommendations, can considerably affect women’s purchasing decisions. It can be difficult for women to resist the pressure of the environment when they see other people buying the same products.

Another group of psychological factors is trust and credibility, which can include the influence of the presenter and a sense of community. Live stream hosts often become authoritative figures whom women trust. Their recommendations, charisma, and attractiveness can have a significant impact on the purchase decision. A sense of community is vital. Live broadcasts can create a sense of community and unity with other viewers. This can make women feel more inclined to buy to be part of a group. The third group of psychological factors is practical aspects. They include convenience and time saving; variety and exclusivity. Live shopping can be convenient and can save time because there is no need to leave the house and look for products in the store. Live streams often offer exclusive products that are not available in other stores, which can be of interest to women looking for unique items. Notably, not all women are equally prone to impulse buying during live broadcasts. Individual factors, such as age, personality, income level, and online shopping experience, can also influence their behaviour.

Live e-commerce is becoming increasingly popular, and more companies are using it to engage consumers. The characteristics of live streaming hosts are an essential factor influencing consumers’ impulsive buying behaviour. Emotional contagion plays a key role in this process, as the emotions of the presenters can be transmitted to the viewers and influence their purchasing decisions (Fig. 1).

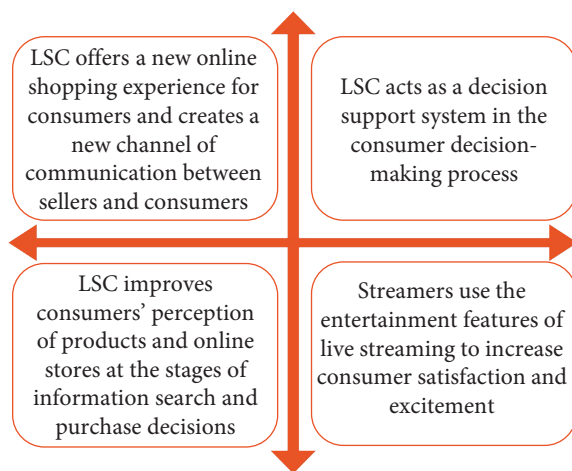


Figure 1. Advantages of LSC

Source: compiled by the authors of this study based on Q.-M. Ying & K.-R. Kim (2022), L. Ma *et al.* (2022) and G. Chodak (2024)

Thus, LSC allows merchants to exchange information with consumers based on their needs and provide additional services to customers. Consumers are willing to buy goods in LSCs because of the relevant product information and pleasant shopping atmosphere. Streamers, as intermediaries between sellers and consumers, use their independent identity to increase consumer awareness of shopping and persuade them to make online purchasing decisions. In other words, the entertainment component encourages consumers to make purchases. Entertainment content in live broadcasts, such as humour, music, and interactive elements, creates positive emotions among consumers. Therewith, consumers satisfy their emotional needs. Positive emotions promote relaxation and stress relief, which is important for modern consumers and for presenters to increase consumers’ propensity to buy. Not to forget, entertaining content also helps to create a more trusting relationship between consumers and the brand, which increases the probability of a purchase. Entertainment not only makes live broadcasts more interesting, but also increases the perceived value of the product, both functional (quality, characteristics) and emotional (pleasure, joy).

The essence of the content is no less important than the person who delivers it. This statement is true regarding the professionalism, authority, and popularity of the live broadcast host. Influential opinion leaders (bloggers, celebrities, experts) considerably influence consumers, which significantly increases the probability of consumers making purchases. The recommendations and opinions of such presenters are perceived as more reliable, which increases the credibility of the product. An opinion leader can emphasise the benefits of a product and evoke positive emotions in consumers, which increases the perceived value. Thus, entertainment and opinion leaders are effective tools to stimulate purchases in LSCs from a psychological standpoint. Businesses and brands can use these factors to create more engaging and compelling live streams that will drive consumers to purchase. Emotions, such as excitement and pleasure, play a key role in purchasing decisions during live broadcasts. In terms of cognitive processes, cognitive assimilation is important, but it has less impact on consumer behaviour than emotions. Parasocial interaction means that feeling connected to the live stream host can considerably affect viewers’ emotions and behaviour. Therefore, it is important for live streaming hosts to be attractive, create parasocial interaction, and provide quality information to influence the emotions and behaviour of viewers. For platforms, it is important to create an environment that promotes positive emotions and viewer engagement. From a psychological standpoint, this will help to stimulate purchases in live broadcasts.

The theoretical study identified four categories of incentives that influence women’s impulse purchases during live broadcasts: profitability, emotionality, quality, and sociality. To determine the psychological characteristics of women who make impulsive purchases during live broadcasts, a study was conducted among residents of Southeast Asia (Philippines, East Timor, Thailand, Singapore, Myanmar, Malaysia, Laos). The empirical study revealed the following factors that influence the purchase of live products (Table 1).

Table 1. Influence of various factors on the perception of e-commerce and live streaming

No.	Signs	Average value of indicators	
1	Online shopping experience	Under a year of online shopping experience (4.01)	Many years of experience (3.82)
2	Frequency of purchases	Make a purchase over 3 times a week (4.05)	Make a purchase less than once a week (3.81)
3	Frequency of viewing live broadcasts	Watch broadcasts more than 3 times a week (4.11)	Watch broadcasts less than once a week (3.82)
4	Age and positive perception of online shopping	Positive attitude towards online shopping: under 18 years (4.04); 26-35 years (4.01)	Neutral or negative attitude towards online shopping: over 55 years (2.25); 45-54 years (2.39)
5	Age and level of engagement in online shopping	More engaged: 18-25 years (4.08); 36-45 years (4.06)	Less engaged: over 55 years (2.25); 45-54 years (2.39)
6	Number of platforms	Attracting customers who use more than 3 platforms for online shopping (4.21)	Attracting customers who use one platform for shopping (3.56)

Source: compiled by the authors

Table 1 shows that women with less experience of online shopping (under a year) demonstrate a more positive perception of e-commerce compared to those with many years of experience. This may be due to the “novelty effect” or the fact that consumers with more experience have higher expectations. According to the frequency of purchases, the more often women shop online, the more favourably they evaluate various aspects of the online shopping experience. Therewith, the frequency of viewing live broadcasts affects positive attitudes, as women who watch broadcasts more often demonstrate more positive perceptions. This confirms the idea that frequent interaction with an e-commerce platform pushes women to make impulsive purchases. In terms of age ratios and positive attitudes and engagement, the most positive perceptions of online shopping are observed in two age groups: under 18 and 26-35. At the same time, the highest level of customer engagement is demonstrated by the 18-25 and 36-45 age groups. This may be explained by the different life stages and consumption habits of these groups. This confirms the idea that product usefulness and ease of purchase have a positive impact on the perception of product usefulness and encourage impulse buying. Therewith, women who use more live streaming platforms demonstrate a more positive attitude towards all aspects of online shopping. This shows that viewers do not stay on a single platform but actively move between them. This can be related to the search for better offers or a variety of content. This supports the idea that different content and price of a product affect the perception of satisfaction or usefulness, and therefore influence impulse purchases.

The second stage of the study was to conduct interviews with respondents to confirm or refute the three hypotheses:

H1. The credibility and attractiveness of the presenter positively influence the perceived pleasure of watching the broadcast, which leads to impulse purchases.

H2. The emotional impact of live broadcasts (excitement, pleasure) contributes to impulse purchases.

H3. Psychological factors (emotional arousal, fear of

missing out on a favourable offer, social influence) influence women's impulse purchases.

In addition, this stage of the empirical research made it possible to make a detailed description of the shopping experience in LSC.

The interview was conducted after watching live e-commerce broadcasts. To test the H1 hypothesis, an experiment was conducted. The study participants were divided into two groups. The first group of participants watched the broadcast with a presenter they did not know and therefore did not trust. The second group of participants watched the broadcast with a presenter they knew and trusted. After watching the broadcast, the participants were asked to rate their satisfaction with the broadcast; indicate whether they made a purchase of the product presented in the broadcast without planning it; and evaluate their attitude towards the e-commerce platform. The results of the study showed that participants in Group 2 (with a familiar presenter) rated the level of satisfaction from watching the broadcast 57% higher than participants in Group 1. Participants in Group 2 made impulse purchases 62% more often than participants in Group 1. Group 2 participants rated their attitude towards the e-commerce platform 48% more positively than Group 1 participants.

Respondents tend to believe that hosts play a key role in shaping the perception of products and brands, with the majority of women trusting the recommendations of streamers – 74.2% and influencing purchase decisions through personal charisma, a significant number of women (62.5%) consider hosts attractive, 58.3% of women consider them competent. Therewith, 25% value social proof, i.e., they are guided by the comments and reactions of other viewers. The results of the study confirm the H1 hypothesis that the credibility and attractiveness of the host positively affect the perceived enjoyment of watching the broadcast, which encourages impulse purchases and leads to a more positive attitude towards the e-commerce platform itself. In this case, the theory of social influence and the theory of emotional value are at work.

Social influence theory states that people tend to adopt the thoughts and behaviour of people they respect and trust. A presenter whom viewers trust is perceived as an expert, which makes their opinion more authoritative. An attractive presenter can evoke sympathy and an emotional connection with viewers, making them more likely to be influenced by the former. Emotional value theory states that people seek emotional connection and positive experiences when consuming content. A presenter who is trustworthy and attractive can create a positive atmosphere, which makes watching the broadcast more enjoyable and emotionally charged. Positive emotions associated with watching a broadcast can lead to a more positive attitude towards the advertised product and e-commerce platform.

The results of the survey in relation to other blocks of questions, namely the emotional impact of live broadcasts. Live streams create an atmosphere of excitement and fun, which is conducive to impulse purchases. 68.3% of women said they feel positive emotions when watching live streams, and 52.5% admitted to making impulsive purchases under the influence of the atmosphere. Therefore, they confirm the H2 hypothesis. The psychological factors that push women to make impulsive purchases during live broadcasts are emotional excitement, fear of missing out on a good deal, and social influence (Fig. 2).

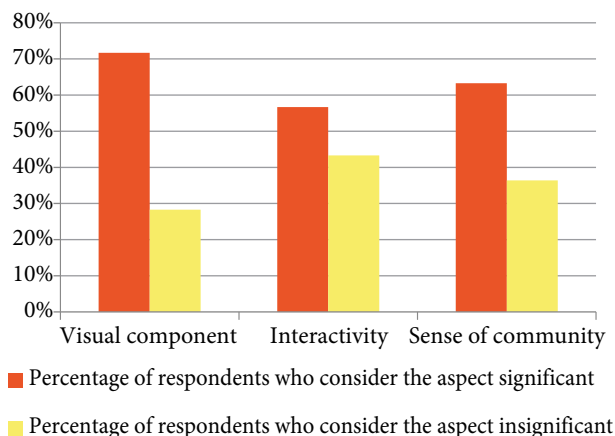


Figure 2. The significance of live streaming aspects

Source: created by the authors

For women, the emotional component is important, and the emergence of positive emotions during live e-commerce broadcasts helps to encourage women as buyers. This is influenced by the vivid presentation of goods (71.7% of respondents noted the significance of the visual component), interactivity (56.7% consider it important to communicate with the streamer), and a sense of community with other viewers (63.3% feel part of a community while watching) create positive emotions that encourage impulse purchases. Fear also reflects the psychological portrait of a woman who makes impulsive purchases during live broadcasts. This is the fear of missing out on a lucrative offer (Fear of Missing Out (FOMO)). When limited offers are offered during live broadcasts (58.3% of respondents

admitted that they buy goods out of fear of missing out on a discount), discounts and promotions create an artificial sense of urgency and FOMO.

Social influence also complements the psychological portrait of women who are prone to impulsive purchases during live broadcasts. Comments and reactions from other viewers (72.5% of respondents read comments during the broadcast), as well as recommendations from streamers (74.2% trust streamers' recommendations), create social pressure and confirm the correctness of the purchase decision. Thus, women are more susceptible to the influence of marketing incentives due to their greater emotionality and social activity. These results confirm the H3 hypothesis. The results of the study suggest that online shopping experience, frequency of purchases, age, and number of platforms used are significant factors that influence the perception of e-commerce and live broadcasts. The psychology of women is focused on an interesting and convenient shopping format that has emotional elements: trust in the products, attractiveness, and expertise of the host.

Among the factors influencing impulse purchases are external (discounts, special offers, free delivery) and internal (fear, curiosity, psychological perception). Therefore, the psychological traits of women that influence impulse purchases are emotionality, curiosity, and social influence – they evoke a desire to purchase impulsively. Therewith, one should not forget about convenience and benefits. Shopping during a live stream saves time and effort. In other words, an effective combination of marketing incentives aimed at arousing the emotional component and well-designed promotional offers (time constraints, limitations on the number of goods, price reductions) encourage women consumers to make unplanned purchases under the influence of the above-mentioned mental properties.

DISCUSSION

The growing popularity of LSC requires an in-depth understanding of the psychological factors that influence consumer behaviour. This study analysed the factors that influence the behaviour of women who make impulse purchases during live broadcasts. This study identified how live broadcasts and presenters stimulate impulse buying in women using a mixed methodology including online surveys and interviews. The female audience of e-commerce live streams expects an immersive, innovative, and personalised shopping experience. Therewith, psychological feelings are important. Women, feeling positive about themselves, are more likely to return to shopping during live broadcasts and trust the presentations of the hosts. The intention of a female audience to purchase a product during a live broadcast depends on several factors, including homogeneity, promotions, product, and atmosphere. A sense of commonality with the presenter (shared interests, values, demographic characteristics), which is confirmed by a positive correlation between the number of platforms used and all ten constructs studied.

The conclusions of this study about the key role of the presenter were confirmed in other scientific studies.

C.-W. Ki *et al.* (2024) believe that the involvement of on-line celebrities can stimulate consumers' emotions and thereby increase their intention to purchase recommended products. Y. Wang (2024) identifies a positive effect of the influence of Internet stars on impulsive consumer buying behaviour. Streamers play a vital role in stimulating impulse purchases during live broadcasts. X. Li *et al.* (2024) concluded that the personal qualities and professionalism of presenters contribute to the formation of consumer trust, especially cognitive trust. Interactivity and entertaining content help to create a flow effect, especially concentration, which encourages impulse purchases. Incentives and offers, such as discounts, gifts, and limited-time deals, can encourage impulse purchases. A quality and relevant product is also a principal factor, as it forms the basis for arousing the desire to buy. The overall experience of a live stream, including visuals, music, and audience interaction, also influences purchase intent. Notably, the impact of these factors is mediated by emotional trust in the presenter and the perceived emotional value of the product.

The conclusions of the present study about the cases when the product and the atmosphere of the broadcast do not evoke positive emotions and do not build trust, the broadcast does not affect the consumer's desire to make a purchase are also consistent with the findings of other studies. J. Cao *et al.* (2022), who examined the impact of self-efficacy and perceived value on customer engagement in a live streaming commerce environment, found that overall self-efficacy positively influences perceived usefulness, perceived entertainment, and live streaming self-efficacy; perceived usefulness, perceived entertainment, and live streaming self-efficacy have a positive effect on perceived value; perceived value has a positive effect on customer acquisition behaviour; and live streaming self-efficacy has a positive effect on perceived value and customer acquisition.

It is important to understand customer psychology and use the S-O-R theory. In the LSC context, the S-O-R theory can be applied as follows: stimulus (S): live streaming with all its elements (visual content, streamer, comments, limited offers). Organism (O): the psychological processes of the consumer, such as emotional arousal, fear of missing out (FOMO), social influence, perceived value, and trust in the streamer. Reaction (R): impulsive purchase of a product. Thus, the S-O-R theory helps to understand how a woman's psyche reacts to various aspects of live broadcasts and how they influence and encourage her to make impulsive purchases. C.-H. Lee & C.-W. Chen (2021) and Y. Qu *et al.* (2023) also concluded that this stimulus-organism-response (S-O-R) model explains how external stimuli (stimuli) affect internal states of a person (organism), leading to certain behaviours (responses). Therewith, the attractiveness and expertise of the host has the greatest impact on consumers' propensity to make impulse purchases during live broadcasts.

Sales promotion during live broadcasts relies on the psychological aspects of consumers, such as emotions, cognitive processes, and parasocial interaction. While cognitive

processes, such as rational product evaluation, play a role in purchasing decisions during live streaming, emotions, such as arousal and pleasure, have a more considerable impact on consumer behaviour. Moreover, parasocial interaction, i.e., a sense of connection with the presenter, can considerably increase the emotional response and encourage impulsive purchases. Thus, the emotional component is key, and these findings are confirmed by other studies. The main conclusion of the study by S. Cachero-Martínez & R. Vázquez-Casielles (2021) is that to activate emotional states in consumers, retailers must facilitate experiences. The findings of N.B.O. Alvarado *et al.* (2020) suggest that positive and negative emotions can trigger impulsive buying behaviour, but negative emotions are stronger and more prone to such an impulse.

The psychological factors that encourage women to make impulse purchases during live broadcasts include emotional excitement, fear of missing out on a good deal (FOMO), and social influence. This is confirmed by the study of the model of marketing strategies based on the use of discounts and limited offers in C. Qing & S. Jin (2022). Marketing strategies such as the use of discounts, limited offers, and other tactics to encourage spontaneous purchases. The findings of the study suggest that women's perceptions of e-commerce and live streaming are influenced by a range of factors, including their previous online shopping experience, frequency of online shopping, age, and the number of platforms they use. Therewith, women prefer an interesting and convenient shopping format that has an emotional impact, including trust in the products, attractiveness, and expertise of the host. The study found that live broadcasts create an emotionally charged atmosphere, which is reinforced by the fear of missing out on a good deal (FOMO) and social influence. The role of presenters is particularly important, as their charisma, expertise, and attractiveness influence the perception of products and brands, stimulating impulse purchases.

The above conclusions are partially consistent with the study by B. Lu & Z. Chen (2021) in terms of the significance of presenters and their values. Consumers who share the values of broadcasters are more likely to trust them and are more likely to buy the products they recommend; the significance of trust. Trust in the presenter is a key factor in making a purchase decision. The theses of this study refer to reducing uncertainty. Presenters help to reduce consumer uncertainty about the product and the seller, which increases the probability of a purchase; physical characteristics of broadcasters. Consumers who feel physical likeness to broadcasters are more likely to buy the products they recommend. This is inconsistent with the findings of the present study. Interactivity, visual appeal, and ease of shopping during live broadcasts are also crucial factors. The study found that women who watch live streams more often and use more platforms are more likely to make impulse purchases. The conclusion of this study on the significance of the visual component is confirmed by E.M. González *et al.* (2021), which emphasises the

importance of visual presentation of products for female consumers. Contextual saturation increases the perceived emotional value of a product for women, which is a key factor in shaping purchase intent.

This study provides valuable insights into understanding the psychological mechanisms underlying women's impulse purchases during live broadcasts. Marketers and business owners can use these findings to develop effective strategies for attracting and retaining female customers in the LSC industry.

CONCLUSIONS

The study found that live streaming in e-commerce substantially changes consumer behaviour, especially for women, by promoting impulse purchases. The study tested three hypotheses, which were confirmed during the study. The credibility and attractiveness of the presenter positively influence the perceived pleasure of watching the broadcast, which leads to impulse purchases. Participants who watched the broadcast with a familiar presenter rated their satisfaction with the broadcast 57% higher than participants in Group 1. Participants in Group 2 made impulse purchases 62% more often than participants in Group 1. Group 2 participants rated their attitude towards the e-commerce platform 48% more positively than Group 1 participants. The emotional impact of live broadcasts (excitement, pleasure) contributes to impulse purchases. 68.3% of women said that they experience positive emotions while watching live broadcasts. 52.5% admitted to making impulse purchases under the influence of the created atmosphere.

Psychological factors (emotional arousal, fear of missing out on a favourable offer, social influence) influence women's impulse purchases. Emotional factor: Vivid presentation of goods, interactivity, and a sense of community with other viewers create positive emotions that encourage impulse purchases. Limited offers, discounts, and promotions create an artificial sense of urgency and fear of missing out on a bargain. Comments and reactions from other viewers, as well as recommendations from streamers, create social pressure and confirm the correctness of the purchase decision.

This phenomenon is explained by a combination of psychological, social, and technological factors, which are triggers for impulse purchases. Psychological aspects include emotionality, fear, social influence, and trust. Live broadcasts evoke positive emotions in viewers, such as excitement, pleasure, and a sense of community, which leads to impulse purchases. Limited offers, discounts, and promotions create a sense of urgency that increases impulsive behaviour. Comments and reactions from other viewers, as well as recommendations from streamers, confirm the correctness of the purchase decision and encourage action. The personal charisma, expertise, and attractiveness of streamers build trust in the product and brand, which is an essential factor in making a purchase decision.

Emphasising the technological aspects that encourage women to make impulse purchases during live broadcasts, the study identified the following: interactivity, visual appeal, and convenience. The ability to communicate with the streamer and other viewers in real time increases engagement and drives impulse purchases. High-quality product presentation, demonstrations, and reviews stimulate an emotional reaction and a desire to own the product. The ability to make a purchase while watching the broadcast simplifies the process and prevents impulsive decisions. Social aspects that were identified in the study: parasocial interaction, sense of community. A sense of connection with the streamer creates the illusion of a friendly relationship and increases trust in recommendations. The feeling of belonging to a community of viewers enhances emotional response and promotes the adoption of group norms, including impulse purchases. The study had certain limitations, such as the small sample size and focus on the Southeast Asian market. Further research could be aimed at investigating impulse buying in different cultural contexts, as well as developing more detailed psychological models of this phenomenon.

ACKNOWLEDGEMENTS

None.

CONFLICT OF INTEREST

None.

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Ліфень Цзян

Доктор філософії
Чіангмайський університет
50200, Хуай Кео дорога, 239, м. Чіангмай, Таїланд
<https://orcid.org/0009-0001-3444-5126>

Піанг-ор Лоахавілай

Доктор філософії
Чіангмайський університет
50200, Хуай Кео дорога, 239, м. Чіангмай, Таїланд
<https://orcid.org/0000-0001-7970-8252>

Піячат Удомвонг

Доктор філософії
Чіангмайський університет
50200, Хуай Кео дорога, 239, м. Чіангмай, Таїланд
<https://orcid.org/0000-0002-3915-6411>

Дослідження впливу психологічних факторів на прийняття жінками рішень про покупку під час прямого ефіру в електронній комерції

Анотація. Окрім YouTube та Instagram, з'явилися нові платформи для прямої трансляції електронної комерції (TikTok Shopping, Amazon Live), що відкриває нові можливості для взаємодії з аудиторією та стимулювання продажів. Жінки, шукаючи емоційного та інтерактивного досвіду, схильні здійснювати імпульсивні покупки під час прямих трансляцій. Саме тому необхідно дослідити цю тему. Метою даного дослідження було вивчити психологічні чинники, які впливають на імпульсивні покупки жінок під час перегляду прямих ефірів та визначити психологічні характеристики жінок, які здійснюють імпульсивні покупки під час прямих ефірів. Дослідження включало анкетування та інтерв'ю з жінками, які проживають на Філіппінах, у Східному Тиморі, Таїланді, Сінгапурі, М'янмі, Малайзії та Лаосі. Основні висновки полягають у тому, що дослідження виявило психологічні фактори впливу та психологічні характеристики жінок, які здійснюють покупки під час прямих ефірів у сфері електронної комерції. Психологічні особливості включають емоційність під час перегляду (68,3 % респондентів), страх пропустити вигідну пропозицію (58,3 % респондентів) та піддаватися впливу інших глядачів та стрімерів (74,2 % довіряють рекомендаціям). Психологічні фактори включають набір технологічних та соціальних складових. Технологічні фактори включають інтерактивність та спілкування в режимі реального часу (56,7 % вважають це важливим); візуальну привабливість та демонстрацію товару (71,7 % вважають це важливим); зручність здійснення покупок під час перегляду. Соціальні фактори включають парасоціальну взаємодію зі стрімером, відчуття спільності з іншими глядачами (63,3 %). Дослідження також визначило роль ведучих, яка відіграє значну роль у формуванні довіри до продукту та онлайн-платформи: формування довіри до продукту та бренду (74,2 % довіряють рекомендаціям); вплив через харизму, експертизу та привабливість (62,5 % вважають їх привабливими, 58,3 % – компетентними). Прямі ефіри ефективно стимулюють імпульсивні покупки серед жінок. Ключову роль у цьому процесі відіграють емоції, довіра та соціальний вплив. Практичне значення дослідження полягає в можливості допомогти жінкам краще зрозуміти фактори, які впливають на імпульсивні покупки, уникнути впливу емоційних стимулів та соціального тиску. Результати дослідження можуть бути використані для розробки рекомендацій щодо того, як ефективно здійснювати покупки в Інтернеті

Ключові слова: імпульсивні витрати; психологія споживача; емоції; соціальний вплив; довіра; deepfake

UDC 378.147
DOI: 10.52534/msu-pp3.2024.85

Vasyl Dufynets*

Doctor of Medicine, Associate Professor
Mukachevo State University
89600, 26 Uzhhorodska Str., Mukachevo, Ukraine
<https://orcid.org/0000-0001-6813-4724>

Tetiana Shcherban

Doctor of Psychology, Professor
Mukachevo State University
89600, 26 Uzhhorodska Str., Mukachevo, Ukraine
<https://orcid.org/0000-0002-3702-8029>

Volodymyr Hoblyk

Doctor of Economics, Professor
Mukachevo State University
89600, 26 Uzhhorodska Str., Mukachevo, Ukraine
<https://orcid.org/0000-0003-1830-3491>

Integration of medical knowledge into psycho-pedagogical practice

Article's History:

Received: 17.06.2024
Revised: 10.08.2024
Accepted: 25.09.2024

Suggested Citation:

Dufynets, V., Shcherban, T., & Hoblyk, V. (2024). Integration of medical knowledge into psycho-pedagogical practice. *Scientific Bulletin of Mukachevo State University. Series "Pedagogy and Psychology"*, 10(3), 85-96. doi: 10.52534/msu-pp3.2024.85.

Abstract. The method of the research was to identify promising trends in the use of medical knowledge in pedagogical and psychological activity in the context of emotional, physical and spiritual well-being of modern society. In the research, a SWOT-analysis was carried out, which identifies the main risks, opportunities, weaknesses, and strengths of integrating medical knowledge in psycho-pedagogical practice. Medical knowledge and its application to human personality through the activity of pedagogues and psychologists. The interpretation of the concepts of "medical psychology", "medical pedagogy", "integration" and their peculiarities in the modern world is described. Examples of the application of medical knowledge in psycho-pedagogical practice and their application are given. It is understood that the psychological-pedagogical represents a mutually interconnected system that combines theoretical and practical components with the disclosure of the essence of medical knowledge and the development of specific situations. The main functions, possibilities, and risks of pedagogical and psychological activity in the implementation of this process on the basis of modern and innovative technologies. Theoretical experience in the development of medical knowledge in psycho-pedagogical activity of such foreign countries as the United States, Great Britain, Germany, Italy, and the East of Korea). The following advantages of its application are identified: a great improvement of motivation for learning, formation of clinical thinking, skills and competences in education teachers, excellent learning of the required material, professional skills and competences, achievement of successful results in the formation of personal qualities of the student. In accordance with this, the consequences are the creation of a basis for the development of creative individuals, their training with the assimilation of medical knowledge to professional activity in the future and the understanding of the need for quality education throughout life. The conclusions provide information about the changes in the conditions of existence of the society, which were the result of mental, emotional, informational and ecological influence. The practical significance

*Corresponding author



of the work is to improve the physical and mental health of children and adults, as well as to improve their educational and career success

Keywords: health and education; medical diagnostics; psychological support; transformation; experience of foreign countries; SWOT-analysis

INTRODUCTION

The pace of changes and transformations taking place in today's society requires reform and modernization of the education sector. The main objective of the reform is considered to be an efficient acceleration to compliance with international standards, increased mobility and opportunities for employment of education professionals. Therefore, the quality solution of health protection problems, namely the quality of medical assistance to citizens, requires excellent training not only of physicians, but also of psychologists and teachers. At the current stage of training of specialists, the main task of teachers of educational institutions is to cultivate interest in learning, which is a prerequisite for successful learning of information and knowledge. The priority task of modern higher education is to create conditions for quality training of a new generation of highly qualified specialists in various fields. In this case, today's teachers and psychologists must not only be competent in their field of professional tasks, but also have information in interdisciplinary spheres, especially medical knowledge. This knowledge is a necessary component of modern education, as it contributes to the creation of a safe and favourable environment for physical and psychological development of education students. The importance of transforming medical knowledge in the work of teachers and psychologists in modern institutions of higher education in accordance with international standards has been addressed by a few scientists.

O. Topuzov *et al.* (2022) and L. Shakhlina *et al.* (2023) found that the full-scale invasion affected the health of a significant number of people in Ukraine. Therefore, in the conditions of the current problem on the territory of Ukraine, it is important to have knowledge of providing medical assistance to each professional in his/her activity. Accordingly, knowledge about the health of the population, especially humanitarian and medical needs after their deoccupation will increase the planning of the health protection system. As noted by researchers V.V. Shablysty *et al.* (2023), in the conditions of the war situation in Ukraine, international organizations that provide medical assistance to war victims, such as "Medicins Sans Frontières", Oxfam, International Committee of the Red Cross, play a significant role. They, in turn, have the opportunity to share quality medical knowledge, which is relevant today, with other Ukrainian professionals.

Researchers Y. Haleta *et al.* (2023a) carried out the modelling of transferable education into individual regional strategic plans of old age development through pedagogical optimization, which formed a basic integration model that envisages the integration of education into regional

development systems. Other complex models were also developed to describe the stage of securing old growth with the use of modern educational methods. The results of the research provide an opportunity to ensure the development of education through the stages of the processes proposed in accordance with medical knowledge. M. Mintii *et al.* (2023) found that the current reform of education of teachers of psychologists should be based on the best pedagogical experience, the best educational practices, European competence structures and national values. System-wide reforms should be focused on quality content for teachers' professional development, safe learning environment, inclusiveness, and digitalization of education.

In order to ensure quality education and continuous professional development, teachers should involve students in self-discovery and self-development, developing not only professional skills, but also social and personal skills, as well as universal humanistic cultural education based on humanism. High moral values and medical ethics are important for the development of active citizenship among students and social intelligence (Valqueresma & Joaquim, 2021; Yuryk *et al.*, 2024). An important aspect of education should be considered the use of quality and relevant teaching methods, which are based on the theory of democracy. In the research by Y. Dzhygyr *et al.* (2023), the authors argue that the acceptance and sustainability of these reforms could be enhanced by making the decision-making process more efficient. The researchers J. Sanchez *et al.* (2024), believing that it is the very well-developed methodology of teaching that encourages all educationalists to synthesize, analyse and apply medical knowledge, except for the knowledge of ignorance. These higher-level thinking skills favour not only the improvement of test results, but also the deep learning of the subject.

M. Pytyn *et al.* (2019) and W. Al-Qerem *et al.* (2023) determined in their research the stages of complex medical and psychological assistance to individuals: identification of the source of the problem, work with members of the patient's parents, identification of the optimal method of medical and psychological assistance. All these knowledge professionals must receive at the institution of higher education for further successful work. The correct use of effective teaching technologies, which include medical knowledge, gives the opportunity to improve the physical, psychological, social and spiritual health of education students, as emphasised by scientist T. D'Isanto (2019). Education should be focused on enriching human capabilities and achieving positive psychosocial personal changes through the implementation of theoretical and practical

educational resources. Such technologies are specialized on joint work and include three main interrelated areas: educational, psychological and physical.

The aim of the article was to identify the importance and possibilities of integrating medical knowledge into psychological and pedagogical practice for the development of effective strategies for training and support of education students. In accordance with the set goal, the following tasks of the research were set:

- review of current approaches to the integration of medical knowledge, which are used in psycho-pedagogical practice;
- identification of factors and causes of integration of health aspects from the point of view of quality of education, health and general well-being of education students;
- formulation of practical recommendations for educators and psychologists on the integration of medical knowledge into their work, including teaching methods, approaches to psychosocial support and cooperation with medical professionals.

MATERIALS AND METHODS

To carry out the research on the submitted topic, various materials were used, which helped to make a good analysis and identify recommendations for the use of medical knowledge in professional activity. This required the use of different approaches and identification of the main aspects. Analyses of scientific world and Ukrainian literature allowed getting a broad understanding of the concepts of “integration”, “medical psychology”, “medical pedagogy”, identifying their main aspects and functions. The next stage is the identification of approaches that have already been implemented in the field of integration of medical knowledge. The study of theoretical concepts and models helped to create a comprehensive approach, which should be used in the practice of teaching. This included studying and identifying the significance of medicine in the foundations of the theories of pedagogy and psychology, as well as their points of intersection and interaction. Active information about the importance of education and health-saving technologies in education in accordance with the normative legal document, namely Law of Ukraine No. 651-XIV “On General Secondary Education” (2020), to identify three components of the simplification of education, firstly, education technologies, then health technologies and finally health education technologies.

The analysis of some medical knowledge was made in order to identify the importance and their role separately for any professionals, especially psychologists and teachers, in their own professional activity. In accordance with the information received, it was summarized and reflected medical aspects in the psychological and pedagogical perspective, among which physical health, psychological disorders, neurodevelopment, and psychosomatic links, and combined in different professions, in particular, the above-mentioned professionals. The assessment of the low benefits and the causes of the integration of medical aspects

in terms of the quality of education, health and general well-being of education students was made.

The theoretical foundations of the countries that are recognized as leaders in the field of mental health (USA, Great Britain, Germany, Italy, and East Korea) and are actively developing the field of psycho-oncology to improve the psychological state. The research is based on SWOT-analysis, conducted on the basis of identifying the current status of integration of medical knowledge in psycho-pedagogical practice in Ukraine. The analysis helped to identify not only strong sides and opportunities, but also weak sides and some threats, connected with the use and transformation of medical knowledge in the work of psychologists and teachers. Using these results, it is possible to develop strategies to improve the educational process, which will favour the improvement of the quality of education and health of students.

RESULTS

Integration as a process of forming a comprehensive rich and comprehensive picture of the world today has gained the status of the main methodological basis of education, as it is a reflection of the general quality of the postmodern information society. At the same time, it is impossible not to recognize the importance of scientific and pedagogical positions on this phenomenon, which will favour theoretical and applied development, especially technological, which will ensure not only material but also procedural aspects of training, education, professional and personal development of teacher-correctors.

Due to the progress of science and technology, the living conditions of mankind are changing rapidly. Mechanisms of physiological protection do not absorb high information pressure, psychoemotional pressure, environmental stress. In accordance with this, it is necessary to develop and implement new medical technologies that meet the needs of modern society, time and can be used in the practical activities of teachers and psychologists. The most promising direction of future medical care is a comprehensive approach to treatment, which organically combines the most effective methods of treatment to preserve health.

The term “integration” (Latin integer – integer, integration – renewal, filling, addition) means unity of the whole, unity of any element, and renewal (Aydınlı *et al.*, 2024). The integrative approach in education leads to the integration of educational content, i.e. to the completeness of its elements, to the appropriate unity, as the result of the integrative approach in pedagogy can be a sum of knowledge about different levels of the whole knowledge-reality. The process of integration presupposes the evolution of naturally and objectively existing links and the transition to a new quality. Integration in the field of humanistic education has practical philosophical, psychological, didactic and pedagogical prerequisites.

Medical knowledge is defined as the sum of information, methods, concepts, and skills related to individual health promotion, diagnosis, treatment, prevention of

disease and general well-being (Loyal *et al.*, 2023). They cover a wide range of scientific disciplines, including biology, chemistry, physics, psychology, sociology, and many others. Medical knowledge includes such elements as anatomy and physiology; pathology (diseases, their causes (aetiology), mechanisms of development (pathogenesis), changes in the organism); pharmacology (medicines and their effect on the organism); diagnostic methods (laboratory analyses, medical visualisation); treatment (therapy and rehabilitation); preventive medicine; hygiene and epidemiology; health psychology (study of psychological aspects of health and disease, influence of psychological factors on physical health, methods of psychotherapy and psychoprophylaxis); Bioethics (ethical issues in medicine, including medical research, organ transplantation, reproductive technologies and other aspects of medical practice) (Zavizion *et al.*, 2020). The above-mentioned knowledge is the basis for the work of health professionals, including physicians, nurses, pharmacists, and other health professionals. It is also important for education programmes aimed at increasing the population's awareness of health, preventing disease and promoting healthy lifestyles. Increasing medical knowledge contributes to improving the quality of life, reducing the incidence of disease and improving the general state of health of the population.

On the one hand, in the modern world there are scientific discoveries, scientific and technical developments, implementation of new technologies. All this favours the improvement of living conditions of the society, balanced nutrition, improving the efficiency of medical care, improving health, reducing morbidity, reducing the length of life and population. On the other hand, the kaleidoscopic speed of changes in living conditions leads to mental, emotional, informational and environmental impact. In particular, the human organism is unable to adapt and many new diseases in various forms occur. The number of chronic diseases is also increasing due to the deterioration of treatment (chronicity of acute conditions), and the fluctuation of viral and microbial factors. Highly effective medicines (mainly antibiotics, vaccines) and advanced surgical techniques help to cure and improve the lives of thousands of patients. However, it should be recognized that academic medicine has not solved essential fundamental problems of modern medicine. Another contradiction of medicine is the declared approach to the human organism as a whole system, the perception of the diseased organism as a single whole, rather than through the prism of the pathology of a particular organ. Today, in clinical medicine, there is no single comprehensive method of diagnostic. There is no single universal integrated method of diagnostics, which allows assessing the state of the organism as a single system of self-regulation. For the last time, there is a tendency to renew forgotten and unknown until now medical diagnostic methods in the whole world, especially in Ukraine. That is why the use of medical knowledge in psycho-pedagogical practice is of particular importance.

Knowledge about health, its basics and characterisation in education is important for several key reasons:

- knowledge of basic medical issues and first aid procedures can help teachers and other education staff to respond to emergencies and safeguard children and young people;
- understanding the aspects of health can help to create an environment conducive to the physical and mental well-being of students. This includes sensible planning of physical activity and the development of psychological approaches that support mental health;
- knowledge about health can help educators to identify early signs of health and mental health problems among students, respond to them more quickly and prevent further deterioration;
- health literacy helps teachers and other education staff to work with students with different health needs and to provide them with quality education and support;
- understanding of health issues enables teachers to work effectively with parents and health workers to provide the best possible support and care for children.

“Medical psychology” and “medical pedagogy” are disciplines that integrate the methods and knowledge of psychology and pedagogy with medical aspects to ensure successful support and care for patients in appropriate settings (Li & Li, 2024). It is important to be more specific about the interpretation of the above-mentioned concepts. Medical psychology – studies the relationship between the psychological state of individuals and their physical health. Medical psychologists provide psychological support to each patient who encounters a disease, trauma, or other medical problems. They help patients to cope with stress, depression, anxiety, and other psychological aspects of treatment. In its turn, medical pedagogy – studies pedagogical aspects of medical education and training in medical institutions. Medical pedagogues develop educational programmes, instructions, and methods of evaluation for the training of medical professionals. This knowledge also allows realizing pedagogical supervision of medical students of higher education institutions and residents during their practical training.

General medical psychology studies the main laws of psychology of the injured person. At the same time, it is the study of somatopsychic and psychomatic processes, and medical mysteries, which is a duty, ethics (medical deontology). Medical psychology includes information about individuality of persons (character, temperament), the development of stages of ontogenesis and volitional processes. The organization of psychological medicine should be based on the neuroscientific approach. Aspects of this approach are:

1. Principles of positive psychiatry for enhancing human potential;
2. Preventive psychology – prevention of psychopathological influence on people;
3. Identification and management of the consequences of psychopathology that go beyond the human capital of workplaces and organizations;

4. Increasing the potential of human capital of the organization on the basis of the findings of neuroscience, positive psychiatry, principles of renominal psychology, principles of management, quantum physics and principles of philosophy of mind;

5. Maximization of human potential and productivity, impact on organizational creativity and entrepreneurship.

Medical knowledge plays an important role and is an important tool for any psychologist in his/her professional work. The main component, which includes medical knowledge in the work of a psychologist, should be considered firstly the importance of understanding of psychological disorders, because this knowledge, their signs, causes and possible methods of treatment help psychologists to identify and work with patients who have problems. Further, it is necessary to understand medical history and treatment, because it can affect mental health and behaviour (knowledge about taking medicines or other medical procedures that can affect mental health). Awareness of the physiological aspects of psychology (chemical balance in the brain, the role of skin hormones in the emotional state and other physiological processes) helps psychologists to understand and work effectively with patients. In the work of a psychologist in psycho-pedagogical activity, it is important to have a close cooperation with medical professionals to solve problems in learning and use of medical knowledge. In turn, medical knowledge helps psychologists to provide support and counselling to people who are recovering from serious illnesses or medical procedures. In

other words, the above-mentioned components of medical knowledge provide effective and comprehensive support to each patient in his/her psychological well-being.

When analysing the work of a teacher, the process of integration of medical knowledge in professional activity is also important for this professional. Medical knowledge can be useful for teachers in the following aspects:

- knowledge of the physiological and psychological processes of child development taking into account the age category helps teachers to create the right conditions for learning, development and respond to their needs;

- first aid skills are of paramount importance, as Ukraine is under conditions of full-scale invasion and basic medical knowledge will be only useful for the teacher in case of minor injuries or general medical situations;

- informing about the child's general health condition helps to identify any potential problems and provide appropriate support;

- with understanding of emotional processes, it is possible to influence more effectively on the emotional state and behaviour of education students;

- understanding of medical aspects also helps teachers to communicate with parents and guardians about health issues and the development of education students.

In accordance with the designation of the above-mentioned main aspects of the inclusion of medical knowledge in the practice of teachers' work, Table 1 is compiled, which reflects this knowledge in psychological and pedagogical practice.

Table 1. Medical aspects and their reflection in psycho-pedagogical practice

Health aspects	Reflections in the psychological and pedagogical practice
Physical health	Taking into account the physical health of education students when planning the teaching regime and physical education activities
Psychiatric disorders	Creation of individual approaches to education and training of education students with mental disorders
Neurodevelopmental	Application of neurodevelopmental knowledge for optimization of methods of education and development in education students
Psychosomatic links	Identification of the relationship between physical health and mental state for the development of a comprehensive approach to the psychological support of education students

Source: compiled by the authors

Medical psychology is growing, increasingly developing in conjunction with medicine and using the results of psychology not only for diagnosis, treatment, and prevention of diseases, but also for social and labour rehabilitation of patients. The interest of medical psychology lies in providing support to people in order to prevent psychosomatic disorders and reduce acute traumatic reactions. Realization of the integration of medical knowledge in pedagogical and psychological activities is possible on the basis of modern and quality technologies, which are aimed at the improvement of education and accordingly perform the main functions:

- quality learning of the material, improving accessibility and efficiency of education;
- formation of professional skills and competences,

clinical thinking among students of education;

- achievement of quality results in the formation of personal qualities of each student in the conditions of creating the basis for the full-fledged development of a creative and successful personality;

- preparation of low knowledge, especially medical knowledge, for professional activity in the future and understanding of the necessity of education during the life of each individual.

In accordance with the analysis of the above-mentioned information, a SWOT-analysis was carried out, which identifies the strengths and weaknesses, threats and opportunities for the use of medical knowledge in the work of psychologists and teachers (Table 2).

Table 2. SWOT-analysis of medical knowledge integration into psycho-pedagogical practice

Strengths	Weaknesses
<ul style="list-style-type: none"> improving the results (improving the development of education students, especially those who require an individualized approach through medical peculiarities); integrated approach (the combination of psychological, pedagogical and medical aspects contributes to the development of integrated programmes of support for education students); preventing possible problems (early detection of medical problems can help to avoid serious negative consequences for the child's development). 	<ul style="list-style-type: none"> heterogeneity of medical data (medical data can be difficult to access, which complicates their integration into psycho-pedagogical practice); lack of knowledge of all teachers (psychologists and pedagogues may not have sufficient knowledge and this makes it difficult to use them in their work); necessity of cooperation (active cooperation with medical professionals).
Opportunities	Threats
<ul style="list-style-type: none"> development of innovative approaches (development of innovative, new methods of psychological and pedagogical support); improvement of professional competences (improvement of medical knowledge can increase professional competence and efficiency of work of specialists); additional resources and support for special-needs education providers. 	<ul style="list-style-type: none"> insufficient consolidation of data (lack of uniform systems of accounting and exchange of medical information can complicate the process of integration of medical knowledge into practice); limited resources (lack of human and financial resources can complicate the implementation of medical knowledge integration); ethics and privacy (health information exchange is linked to privacy and ethical issues that can cause conflicts and restrictions).

Source: compiled by the authors

In terms of practice in foreign countries, the field of medical knowledge and psychology for oncological patients is becoming more and more relevant every year. Countries recognized as leaders in the field of mental health, such as the USA, Great Britain, Germany, Italy and East Korea, are developing the field of psycho-oncology to improve psychological well-being. In these countries, despite good medical services and a well-designed system of annual preventive check-ups, the incidence of cancer remains very high, and its rates are increasing every year. Each of these countries has its own unique approaches and innovations in the field of mental health, which can be used as examples for improving mental health systems in other countries. For example, the USA has a significant development of telemedicine and mobile add-ons for psychological support, and there is a significant emphasis on scientific research in the field of neuropsychiatry. There is also a highly developed infrastructure, including large psychiatric hospitals and specialized clinics, and a high level of funding from the state and private organizations. In Germany, there are programmes of rehabilitation and integration for people with mental health problems; psychosomatic approach, which integrates treatment of mental and physical health. In South Korea, state programmes for the prevention and treatment of behavioural depression are gaining popularity; psychiatric telemedicine is developing; significant investment is being made in research into neuropsychiatric disorders. As for the health protection system, it is determined by the growing number of specialized medical centres and psychiatric hospitals; increasing awareness of the public about the importance of mental health. In line with the above information, it is important to pay attention to the policies, strategies, innovations, and structure of the health system in order to understand how these elements

contribute to the effective provision of care and support for people with mental health problems (Keller *et al.*, 2024).

The medical psychology profession attracts professionals not only with basic psychological knowledge and the ability to select and apply psychological interventions, but also with the aspects of treatment of chubbiness, principles of promenade therapy and chemotherapy, general knowledge of the peculiarities of chubbiness of the course is also obligatory. Integration of medical knowledge into pedagogical knowledge can be carried out in conjunction with the formation of health protection technology. One of the problems of modern Ukraine is health protection of the young generation. At this time, it should be noted that despite the great respect of people, the health condition of education teachers is constantly getting worse. According to the relevant data, the number of healthy children in Ukraine varies from 4 to 10%. Currently, 36 per cent are in poor physical health, 34 per cent are below average, 23 per cent are average, 7 per cent are above average and only 1 per cent are good (Yuryk *et al.*, 2024). In connection with this, the issue of finding quality educational technologies, where the preservation of students' health is a priority in the educational process, is renewed. This became possible due to the "National Doctrine of Education Development", the main task of which is to cultivate in people a sense of responsibility for their own and other people's health, which is the highest personal and social value. Law of Ukraine No. 651-XIV "On General Secondary Education" (2020) regulates the development of students' personality, the development of skills and abilities, ensures full health and physical development for each student. At the current stage of education development, technological approaches are increasingly being implemented, which are differentiated by their quality characteristics (ensuring the final result and shaping the future educational process).

The term “health-saving technology” is a set of principles, techniques, and methods of educational activities that supplement traditional educational and educational methods and give them the signs of health with the use of medical knowledge by teachers. This concept is derived from the interpretation of health-saving technology as an educational phenomenon and from modern approaches to

the designation of educational technology in general, has objectives, content and developed methods of teaching healthy lifestyle, aimed at solving health problems in the education system. In accordance with the interpretation of the concept, the following components of the simplification of these technologies in the process of development and education of those required are shown in Table 3.

Table 3. Components of health-saving technologies

Compositional elements			
Composition 1: Educational Technology Management	Psychological supervision	Ensuring sanitary and hygiene standards	Introduction of pedagogical technologies
Composition 2: Implementation of health-improving technologies	Physical education lesson	Physical culture and health activities	Dynamic pauses and physical fitness activities
Composition 3: Approval of health education technologies	Integration of medical knowledge	The lesson “Health Protection”	Integration of the subject into the content of other subjects

Source: compiled by the authors

The formation of health-saving technology is an important component of modern education, because it is aimed at supporting and improving the health of education students and teachers themselves, and the important elements are identified, according to J. Sánchez *et al.* (2024):

- needs assessment and analysis (risk identification and health assessment);
- development of health promotion strategy (identification of specific objectives of health promotion activities, development of a programme of measures);
- integration into the educational process (implementation of project work, organization of sports events);
- upgrading the qualification of teachers and psychologists (seminars and trainings, exchange of experience on the basis of interactive platforms, involvement of experts from the medical field);
- psychosocial support (counselling, group support for people with similar problems);
- monitoring and evaluation of the effectiveness of the work (systematic monitoring of the health status of those in need to determine the effectiveness of the implemented measures).

To form health-saving technologies it is necessary to use physical activity, proper nutrition and stress management (relaxation techniques and meditation, creating comfortable zones of rest and comfort). Having analysed the current state of integration of medical knowledge and technologies, the authors of the article identified practical recommendations for psychologists and teachers regarding the use of knowledge in their work, which includes training methods, approaches to psychosocial support and cooperation with medical professionals. The main methods include the use of integrated and innovative programmes that include the basics of medical knowledge in practice for teachers and education providers (e.g. first aid). Although modern education is digitalized, there is a lack of use of multimedia resources and project-based learning, which have significant advantages over traditional education. It

would also be beneficial to request medical professionals to conduct some useful seminars, which form practical skills. It is also valuable to create teams that include teachers, psychologists, nurses, and doctors to discuss and solve health problems of education students. Such regular consultations and discussion of specific cases, planning of interventions and correction of educational programmes.

Equally important is the identification of approaches to psychosocial support, namely: knowledge about mental health (teachers and psychologists must be familiar with the basic aspects of mental health, recognizing symptoms of stress, anxiety, depression and other conditions), creating a safe environment (providing a safe and supportive environment for students, (providing a safe and supportive environment for students to talk openly about their problems), individual counselling (providing individual counselling for students who require additional psychosocial support, including referrals to medical professionals on demand). Integration of medical knowledge into the work of teachers and psychologists is an important factor in the all-round development of students. This allows creating a more harmonious and supportive educational environment, which ensures not only academic development, but also physical and mental health. Integration of medical knowledge into the educational process not only improves the health of the student, but also favours the harmonious development of the personality. This ensures the formation of an informed attitude to one's health, the development of important life skills and the creation of a healthy educational environment. Health management methods, which are implemented in educational institutions, create conditions for the all-round development of children and young people, and favour the improvement of success and quality of life.

DISCUSSION

The survey revealed the facts of insufficient use of medical knowledge in psycho-pedagogical practice. The study reveals that there is a lack of attention to the practical stages

of applying medical knowledge. Such practice will allow using information about medicine effectively in the work of psychologists and teachers. Modern researchers differently interpret the impact of medical knowledge on psychological and pedagogical activity, which requires discussion of the problems.

In general, the research of L.M. Yan Klaveren *et al.* (2024), is devoted to medical psychology, specifically, to the use of medical knowledge in psychology and provides a variety of thoughts and positions, which relate primarily to the concept of “medical psychology” (specifically, their essence), features and priorities of development. The results obtained are consistent with the data of the author’s analysis. W. Wang *et al.* (2023) identify that among the sciences that develop modern approaches to the study of human personality, especially prominent is medical psychology, which focuses on the study of pathological psychiatric conditions and processes, which include one physical and psychological symptoms. In particular, the thoughts of the above-mentioned author agree with the thoughts of the author of this research. The author recognizes that modern medical psychology has a methodological and methodological apparatus, with the help of which it is possible to get good recommendations, which are necessary for successful analysis of the state and treatment of various diseases, as well as it is able to adapt and change, can ethically and socially justifiably influence people’s thinking in order to normalize living conditions, psychological environment of employees and other population groups, logical organization of low-level activities, which includes education and training of adults, children and young people.

The findings of the article are in line with experimental and theoretical research in the field of medical psychology and enrich psychology, pedagogy, and medicine with relevant results, and the application of their applied insights extends to psychologists, health professionals, educators, social workers, teachers and a significant number of other professionals who are engaged in psychological and pedagogical professional activities, according to I. Sundukova *et al.* (2024). The use of medical knowledge in psychology includes psychomatic disorders, psychological peculiarities of patients, psychological aspects of behaviour, methods of psychotherapy and psychology of treatment and diagnostic process. Each of these stages was studied by various researchers. In particular, F.T. Adebusoye *et al.* (2024) focus their attention on the ability to find certain regularities in complex pathological processes, which is one of the forms of cognitive activity of a person, on which all the laws of general medical knowledge are extended, as it was identified by the authors of the article. Correct diagnosis is the most valuable in the work of physicians, psychologists and is an active cognitive, purposeful and creative process. This type of intellectual work is called clinical thinking. Clinical thinking, developed by experienced researchers, is one of the basic elements.

Modern diagnostics must meet several requirements, namely, clear and sometimes individualized in a specific

case, to identify the specifics of the disease experience and the nature of each patient. It should be created in such a way that its structure has prognostic indicators of disease and meets the requirements of the dispensary. An important aspect of the use of medical knowledge in psychology is psychosomatic medicine, which is an interdisciplinary field, which understands the mutual influence of the mind and body and is useful for clinical practice. One-sidedness of organological view in medicine in the 20th century by means of experimental and clinical researches, which included not only specific functional and structural changes in specific organs and systems, but also psychological symptoms. Psychosomatic disorders are more frequent than neurotic ones, as identified in the study of V.O. Belous *et al.* (2018). The results correspond with the study of O. Bilyakovska *et al.* (2023) and I. Isaieva *et al.* (2024), who believe that one of the most important problems of medical psychology is working with patients who have different life problems, people who are in crisis situations. The author of the research supports this idea and adds that psychotherapy is the main and valuable form of psychological help. It is a type of treatment aimed at changing the nature of behavioural reactions of individuals, the subject’s experience, and in the result, also on the activity of the functional system of the organism in accordance with the effect on psychology during the patient’s conversation with a psychologist, the study states.

Problems of medical pedagogy require special consideration. Medicine and medical knowledge is both an art and a science, which can improve and ruin people’s health. Everything depends on how the complex of necessary knowledge is transferred to future professionals. H.E. Chow and Q.H. Chew (2021) recognize that medical education is about providing students with a shared experience of the art and practice of medicine. This is achieved primarily through all-inclusive interaction with patients. The clinical educator uses lectures, simulations, laboratory sessions, small group training and technical sessions (e.g. ultrasound diagnosis) to fully integrate into clinical experience. On the one hand, medical knowledge is learnt at the university level and, on the other hand, at the school level. However, both teachers and students need to be aware of what should be communicated to the appropriate audience and how to work together with higher education teachers and students, take the position of researchers Y. Haleta *et al.* (2023b). Medical pedagogy is also connected with important aspects of medical education – spiritual and professional. However, as recognized by W. Al-Qerem *et al.* (2023), that through teaching, research and clinical obligations, professors, and staff have relatively little time for pedagogical activity. In addition, the lack of active social interaction hinders the development of teamwork and communicative skills that would prepare future professionals for effective, comprehensive care of patients and interprofessional, multidisciplinary practice.

The authors of the article found that the academic cooperation of the modern world is starting a continuous

integration of pedagogy into medical education, which is also pointed out by researchers L. Hollenstein and C. Brühwiler (2024). This is done in order to orientate future medical professionals towards successful treatment, professional satisfaction, commitment to medicine, competence and vitality, as well as the emergence of productive innovations. The findings of the studies of J.G. Couto *et al.* (2024) and J. Vázquez-Díaz (2024) supplement the ideas of the author and confirm that in modern medical education, pedagogical approach is based on the balance and integration of the principles of autonomy, kindness towards patients. The main indicators are autonomy – the duty to protect and support a certain choice of patients; benevolence – the commitment to influence the appropriate behaviour and act in the right interests of the patient's health and society; absence of malicious intent – the pledge not to harm; fair decisions; encouragement of opportunities to improve life. Today, the term “correctional pedagogy” is also being considered, in which professionals often need medical knowledge. Correctional pedagogy investigates the psychophysiological peculiarities of the development of children with physical and psychological developmental disorders, the regularities of their education, teaching and training, as identified by T. D'Isanto (2019). This includes the activity of special educational and educational institutions and preschool educational institutions, correctional classes (compulsory classes, compulsory pedagogy), speech therapy centres, and special preschool groups for children with disabilities, which are engaged in solving general educational tasks.

Summarizing the above-mentioned information, it can be stated that the research is of great importance, because the expansion of medical knowledge is extremely necessary in medical and even psychological and pedagogical activities. It is connected with the development of medicine, the development of modern technologies and the development of new trends of folk and non-traditional medicine. The use of medical knowledge in practice by educators and psychologists ensures the process of integration and development of society in general. The process of integration presupposes the degeneration of naturally and socially existing links and the transition to a new quality. Integration in the sphere of humanistic education has practical philosophical, psychological, didactic and pedagogical conditions. In the last years, there is a tendency to integration of medical knowledge in psycho-pedagogical activity in Ukraine and in the world. That is why the use of medical knowledge in psycho-pedagogical activity is of particular importance.

CONCLUSIONS

Integration of medical knowledge into psycho-pedagogical practice is a very important aspect of modern education and training. Considering the complexity and complexity of children's development, especially with special educational needs, ensuring harmonious development and successful socialization requires medical, psychological, pedagogical and academic knowledge. Integration has

gained the status of the main methodological principle of education, as it reflects the general character of postmodern information society. This favours theoretical and applied development, especially technological development, and provides not only material but also procedural aspects of education and training, professional and professional development and self-development of professionals in psychological and pedagogical activity. Medical knowledge is necessary for these professionals in the effective implementation of their methods.

Firstly, medical knowledge allows teachers and psychologists to better understand the physical and psychological condition of education students, which becomes the basis for the development of individual educational programmes. Knowledge of the peculiarities of the nervous system development helps, for example, to adapt educational material and methods to the individual needs of pupils and students. In addition, information about the disease and its impact on the educational process favours the creation of a safe and comfortable educational environment. On the other hand, the integration of medical knowledge favours early diagnosis and immediate intervention. Understanding the medical aspects of development allows teachers and psychologists to identify the disorders and provide the necessary professional help. In addition, the combination of medical and psycho-pedagogical knowledge favours the professional development of teachers. The inclusion of courses in basic medicine, neuropsychology, and other complementary fields into the curriculum helps teachers to better understand their students and respond more effectively to their needs. Furthermore, this integration increases the level of cooperation between different experts. The team approach, which includes physicians, psychologists, teachers and social workers, ensures a comprehensive approach to the development of the child, which takes into account all aspects of life and health of the child. That is why the integration of medical knowledge into psychological and pedagogical practice is an important element of building an effective educational system, which ensures the all-round development of the child and adaptation to society. This not only improves the quality of education, but also ensures a healthy and happy childhood for all children and people. In the research, SWOT-analysis was carried out, which identifies the main risks, opportunities, weaknesses, and strengths of the integration of medical knowledge in psycho-pedagogical practice. The biggest risks include: lack of consolidation and exchange of medical information, use of medical knowledge in practice, and limited resources of teachers and psychologists. Opportunities include the development of innovative approaches, additional resources, and improvement of professional skills.

Important conditions require from each person psychological patience, tolerance, care, and resilience. In the life of each individual, there is a need to be honoured and to keep the appropriate assistance in difficult life situations. Nowadays, the need for psychological support for solving serious life problems, favouring self-realization and

disclosure of individual potential has become especially urgent. The study was limited to a minimum sample of states, which were considered in the article. A promising area of research is integrative medicine, which can be carried out by professionals in psycho-pedagogical activity.

None.

None.

ACKNOWLEDGEMENTS

CONFLICT OF INTEREST

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Василь Дуфинець

Доктор медичних наук, доцент
Мукачівський державний університет
89600, вул. Ужгородська, 26, м. Мукачево, Україна
<https://orcid.org/0000-0001-6813-4724>

Тетяна Щербан

Доктор психологічних наук, професор
Мукачівський державний університет
89600, вул. Ужгородська, 26, м. Мукачево, Україна
<https://orcid.org/0000-0002-3702-8029>

Володимир Гоблик

Доктор економічних наук, професор
Мукачівський державний університет
89600, вул. Ужгородська, 26, м. Мукачево, Україна
<https://orcid.org/0000-0003-1830-3491>

Інтеграція медичних знань у психолого-педагогічну практику

Анотація. Метою дослідження було визначення перспективних напрямів використання медичних знань у педагогічній та психологічній діяльності у контексті емоційного, фізичного та духовного благополуччя сучасного суспільства. У дослідженні проведено SWOT-аналіз, що визначає основні ризики, можливості, слабкі та сильні сторони інтеграції медичних знань у психолого-педагогічній практиці. Розглянуто медичні знання і їх застосування на людську особистість через діяльність педагогів та психологів. Визначено трактування поняття «медична психологія», «медична педагогіка», «інтеграція» та їх особливості у сучасному світі. Наведено приклади застосування медичних знань у психолого-педагогічній практиці та їх пристосування. З'ясовано, що психолого-педагогічна представляє взаємопов'язану систему, що поєднує теоретичну і практичну складові з розкриттям сутності медичних знань і розв'язанням конкретних ситуацій. Окреслено основні функції, можливості та ризики педагогічної та психологічної діяльності при реалізації даного процесу на основі сучасних та інноваційних технологій. У дослідженні подано теоретичний досвід у розвитку медичних знань у психолого-педагогічній діяльності таких іноземних країн, як США, Велика Британія, Німеччина, Італія та Південна Корея). Визначено такі переваги застосування: вагоме покращення мотивації навчання, формування у здобувачів освіти клінічного мислення, навичок та умінь, відмінне засвоєння потрібного матеріалу, професійних умінь і навичок, досягнення успішних результатів у формуванні особистісних якостей студента. Відповідно до цього, наслідками є створення основи для розвитку творчих особистостей, їх підготовки із засвоєнням медичних знань до професійної діяльності у майбутньому й розумінням необхідності у здобутті якісної освіти впродовж усього життя. У висновках подано інформацію про зміни умов існування суспільства, які були наслідком розумового, емоційного, інформаційного та екологічного впливу. Практичне значення роботи полягає у покращенні фізичного та психічного здоров'я дітей та дорослих, а також на підвищення їхнього навчального та кар'єрного успіху

Ключові слова: здоров'я та навчання; медична діагностика; психологічна підтримка; перетворення; досвід зарубіжних країн; SWOT-аналіз

UDC 159.9:373.1

DOI: 10.52534/msu-pp3.2024.97

Pavlo Bleshmudt*

PhD in Psychology, Lecturer

International Humanities and Pedagogical Institute “Beit Khana”

49000, 5 Uspenska Sq., Dnipro, Ukraine

<https://orcid.org/0009-0004-8953-3037>**Preparing future psychologists to develop motivational systems****Article's History:**

Received: 19.04.2024

Revised: 21.08.2024

Accepted: 25.09.2024

Suggested Citation:

Bleshmudt, P. (2024). Preparing future psychologists to develop motivational systems. *Scientific Bulletin of Mukachevo State University. Series “Pedagogy and Psychology”*, 10(3), 97-108. doi: 10.52534/msu-pp3.2024.97.

Abstract. This study aimed to investigate the process of developing motivational systems in aesthetic medicine, as undertaken by future psychology graduates. The methodology involved a combination of modelling and experimentation methods in medical clinics, where the effectiveness of motivational systems created by trainees was tested and evaluated. The research combined theoretical knowledge with practical application, enabling a detailed analysis of how motivational systems can be effectively designed and implemented by future specialists in psychology. The key findings demonstrated that practical involvement in real-world settings, such as medical clinics, significantly enhances trainees' understanding and ability to develop effective motivational systems. The study revealed that integrating practical experience with a professional environment provides valuable insights that a purely theoretical approach cannot offer. The study confirmed that real-world experience in medical clinics helps future psychologists better understand the specific needs and challenges involved in developing motivational systems. Practical training in such settings allows theoretical knowledge to be adapted to real-life situations, significantly improving the effectiveness of the motivational systems created. Future psychologists who had the opportunity to work in clinics demonstrated a high level of skill in addressing practical tasks related to staff motivation, highlighting the substantial contribution of hands-on experience to their training. The research emphasised the importance of integrating practical experience with theoretical instruction in the education of future psychologists, particularly in the context of developing and implementing motivational systems. Educators can utilise the findings to enhance training programmes and approaches to preparing future specialists, especially in the development of specialised courses and training in motivational counselling

Keywords: professional development; strategies; tools; medical clinics; opportunities and risks

*Corresponding author

INTRODUCTION

The study of preparing future psychologists to create motivational systems is both timely and necessary given the contemporary challenges in professional life that demand high levels of motivation from both employees and their managers. Effective motivational systems play a pivotal role in ensuring success in various fields, including the medical sector. However, the process of developing such systems is complex and requires a deep understanding of both psychology and personnel management. Therefore, it

is essential to further develop this area of research as it will contribute to improving the quality of training for professionals in this field.

The modern labour market demands a new concept of professional training for specialists in psychology, based on interaction with the education sector. The ability to take responsibility for work outcomes and acquire knowledge independently depends on the presence of motivation to achieve success, and this motivation must be cultivated during the



professional preparation of future specialists. The primary factor that stimulates employees' work activity and enhances their contribution to corporate operations is incentivisation. No business can function efficiently without an optimal employee motivation system that encourages everyone to work effectively towards personal and corporate goals. However, current incentive systems, whether for businesses or individuals, tend to be one-dimensional, focusing primarily on salaries while neglecting non-material and moral incentives, which often fail to align with the level of development, financial capabilities, work conditions, employee needs, and mentality. Therefore, research into an effective motivational system for future specialists in psychology is essential. Developing an effective motivational system for future psychologists requires the integration of theoretical knowledge with practical experience. A key first step is the design of a clear curriculum that takes into account the individual needs of students and their professional goals.

Specifically, L.A. Osborne *et al.* (2022) explored the methodological aspects of training psychologists, focusing on the development of their motivational orientations. They analysed the formation of motivational strategies during the education of psychology students. S. Kim *et al.* (2024) determined the influence of motivational factors on the effectiveness of the educational process in training psychologists. The researchers found that studying these aspects is crucial and that the training of future psychologists is closely linked to their ability to develop and implement effective motivational strategies in various professional contexts.

One of the research directions explored by Yu. Rudenko *et al.* (2024) focused on analysing the effectiveness of existing psychology training programs, particularly their ability to equip students with the necessary knowledge and skills to work with motivational systems. The research by L. Magwa & K. Mohangi (2022) demonstrated that traditional educational programs do not always consider the specific characteristics of the professional contexts in which graduates will work. This creates a gap between students' theoretical training and the real-world conditions of their future professional activities. The authors emphasised the importance of modernising educational programs to make them more adaptable to the needs of the labour market. The researchers paid particular attention to the development of practical skills and the ability of graduates to adapt to various professional environments, as this will enhance the graduates' competitiveness in the job market and ensure their effective integration into the professional community.

J. Yates *et al.* (2023) focused on the importance of developing motivational systems to enhance the effectiveness of psychologists. The researchers noted that psychologists who can design effective motivational strategies are more successful in working with clients. This is because motivation is a key factor in the therapeutic process and personal development. Meanwhile, B.J. Lovett *et al.* (2023) highlighted that the training of psychologists should include not only theoretical knowledge about motivational systems but also practical skills in their development and implementation.

J. Goldman *et al.* (2024) noted that human motivation is rooted in the desire for self-improvement and the compensation of feelings of inadequacy. They also emphasised the social context of motivation, making their ideas relevant to the training of psychologists, especially in the context of working with motivational systems in various professional and social settings.

Several authors, including R.R. Turner *et al.* (2023) and K. Makhmutova *et al.* (2024), have highlighted the importance of innovative approaches in the training of psychologists. For instance, the use of simulations and practical exercises that model real professional situations aids in better understanding motivational systems and preparing for their practical application. They also emphasised the significance of an interdisciplinary approach, where psychology training incorporates elements of management, pedagogy, and social work, enabling a broader understanding of motivational processes in various professional contexts.

The aim of this research was to determine the effectiveness of preparing future psychologists to create motivational systems based on a developed theoretical model and an empirical study using the example of medical clinics in the field of aesthetic medicine. To achieve this aim, the following objectives were set:

1. To develop a theoretical model of a motivational system that takes into account the specific activities of psychologists in various professional environments.
2. To conduct an empirical study to test the effectiveness of the proposed model, using medical clinics in the field of aesthetic medicine as an example.
3. To provide recommendations for improving the training of psychologists in the development and management of motivational systems.

MATERIALS AND METHODS

The theoretical model was developed based on an analysis of contemporary research on motivation, psychological training, and human resource management. It incorporated the core elements of motivational systems, such as needs, goals, incentives, and feedback. The model was adapted to the specific needs of training future psychologists, taking into account the necessity of developing and implementing motivational systems in professional practice. The empirical study was conducted in medical clinics specialising in aesthetic medicine, where established motivational systems for staff were already in place. The research was carried out in several stages:

1. Clinic selection;
2. Division of future psychologists into two groups: a control group and an experimental group (the control group did not have any changes implemented in their motivational systems, while the experimental group implemented a new motivational system developed with the participation of future psychologists);
3. Data collection (this involved assessing the importance of key motivational factors on a scale from 1 to 10, where 1 indicated minimal importance and 10 indicated maximum importance);

4. Analysis of results (the collected data were analysed to determine the effectiveness of the implemented motivational system);

The study involved two groups of future psychologists: an experimental group and a control group. The experimental group consisted of 30 participants, comprising 18 females and 12 males, all aged between 20 and 23 years. The control group also had 30 participants, with 16 females and 14 males, within the same age range. In the experimental group, a new model for creating motivational systems was implemented. This model involved several stages, including consultations with participants to identify their needs and motivational factors, as well as the development of an individual motivational programme for each employee. The programme included both material and non-material incentives, such as opportunities for professional development, participation in specialised training, and the promotion of a positive psychological climate within the team. Throughout the experiment, participants received regular feedback and were encouraged to make suggestions for improving the programme. In contrast, the control group utilised motivational systems that were already in place within the clinics. These systems primarily comprised standard approaches, such as material incentives and fixed bonuses, without taking into account the individual needs of the employees.

A variety of motivational strategies were employed in the study for both the experimental and control groups. The experimental group utilised a new motivational system incorporating both tangible and intangible incentives, with a particular focus on individualised approaches for each employee. Conversely, the control group adhered to standard motivational systems already implemented within the clinics, emphasising tangible rewards and basic intangible measures. The selected clinics included the Esthetology centre for aesthetic medicine (a leading institution in this field, known for its high level of service and innovative methods of rejuvenation and cosmetic procedures); the dermatology centre at the Institute of Beauty "Aquarelle", which offers an individual approach to each client and focuses on the treatment of skin diseases. Beseda Aesthetic Clinic provides a wide range of services, including plastic surgery, ultrasound therapy and hardware cosmetology, where the clinic's specialists help clients develop individual treatment plans to achieve optimal results; the modern Elixir clinic specialises in aesthetic medicine and dermatology, focusing on an individual approach and a high level of service. The choice of clinics is explained by the high level of interaction with clients, which requires special attention to the motivational aspects of staff work. The study employed both quantitative and qualitative data collection methods, specifically through surveys. The questions in the survey were as follows:

1. Which factors have the greatest impact on motivation at work (recognition from management and patients, opportunities for professional development, financial rewards, or other aspects)?

2. How do working conditions and relationships within the team affect your motivation? What elements of support from colleagues and management do you consider the most important?

3. How important is it to have the opportunity to apply professional knowledge in practice and receive recognition from management? How does this influence your motivation?

4. Which aspects of the motivational system do you consider most important for job satisfaction: clear evaluation criteria, opportunities for career advancement, financial incentives, or other factors?

The opinions of clinic professionals were crucial to this research as they work directly in environments where motivational systems are implemented and can provide valuable insights into their effectiveness and impact on professional performance. According to the survey responses, each professional evaluated motivational factors based on their own experience and understanding of needs, providing a realistic picture of which aspects of the motivational system work best and which require further development. Specifically, this allowed for an assessment of the effectiveness of existing motivational systems and the identification of key factors influencing employee motivation. Statistical methods were used to analyse the data, revealing patterns and trends in the formation of motivational systems. Additionally, comparisons were made between the data obtained from medical clinics and the expectations of future psychologists, allowing for conclusions to be drawn about the effectiveness of psychology training programs in this area.

The implementation of the motivational system was gradual, with regular monitoring of its effectiveness and adjustments based on collected feedback and analysis results. This ensured maximum efficiency and adaptability to changing working conditions and the needs of professionals. To evaluate the effectiveness of the motivational system model, interviews were conducted with medical clinic specialists regarding motivational systems, in which they identified important aspects of the motivational component in their professional activities.

RESULTS

The training of psychologists in Ukraine requires a high level of theoretical and practical preparation. This field plays a crucial role in society as the profession of a psychologist is indispensable in the rapidly changing modern world, which faces a variety of socio-psychological challenges. The specifics of training psychologists in Ukraine have unique aspects related to the country's historical, cultural, social, and political development. One of the key features of training psychologists in Ukraine is the emphasis on a solid theoretical foundation. Higher education institutions that train psychologists pay significant attention to the study of classical psychological theories, such as psychoanalysis, behavioural psychology, humanistic psychology, cognitive psychology, and others. Students become acquainted with the works of leading scientists, which forms the basis for their future professional development. This approach

allows future psychologists to deeply understand the nature of mental processes and phenomena, which is necessary for effective practical work.

The training of psychologists is not limited to theoretical knowledge. Significant emphasis is placed on practical training for students, which includes internships in various institutions such as schools, hospitals, psychological counselling centres, rehabilitation facilities, and others. This practical experience allows students to apply their acquired knowledge, gain experience working with clients, and develop skills in counselling, psychotherapy, and psychological assessment. In particular, students learn to work with various population groups, including adolescents, children, and adults, enabling them to be prepared to work in diverse settings and with a range of problems. A distinguishing feature of psychology training in Ukraine is the emphasis on developing ethical standards and professional responsibility. Higher education students study ethical codes that regulate the activities of psychologists, and they learn to resolve ethical dilemmas that may arise in their work. Significant attention is also paid to the formation of professional identity and an understanding of the role of a psychologist in society. Future professionals learn to understand the importance of confidentiality, respect for clients' rights, and adherence to principles of non-violent communication.

A crucial aspect of psychology training in Ukraine is the interdisciplinary approach. Students not only study psychology but also gain knowledge in related fields such as sociology, pedagogy, medicine, neuroscience, and others. This enables future psychologists to better understand the context in which the human psyche functions and to work in interdisciplinary teams. Particular attention should be paid to the training of psychologists in the context of contemporary challenges. In Ukraine, as in the rest of the world, there has been a rise in stress levels, anxiety disorders, depression, and other mental health problems among the population. This is linked to a range of factors such as economic difficulties, political instability, the COVID-19 pandemic, and others. In light of this, the training of psychologists must consider these new challenges and adapt curricula to meet the demands of the times. Specifically, students should study contemporary psychotherapeutic methods such as cognitive-behavioural therapy, trauma-focused interventions, relaxation techniques, and stress management, as well as gain knowledge about psychological support in crisis situations.

Equally important in the training of psychologists in Ukraine is the emphasis on developing research skills. Higher education institutions encourage students to engage in scientific research, conduct their own experiments, and participate in conferences. This fosters the enhancement of critical thinking, the ability to analyse and interpret data, and prepares students for potential future academic careers. Training psychologists as researchers is a crucial component, as it ensures the continuous development of the field of psychology and the implementation of new, effective methods for working with clients. Another

significant feature is international collaboration. Ukrainian higher education institutions actively develop partnerships with foreign universities and participate in international educational programmes and exchanges. This enables students to acquire knowledge and experience by utilising best practices in global psychological education. Such opportunities not only enhance the quality of training for professionals but also contribute to the integration of Ukrainian psychological science within the global context. It is also worth noting that the training of psychologists in Ukraine often faces specific challenges, such as insufficient funding for education and limited opportunities for practical training due to a lack of specialised institutions and professional platforms. However, despite these difficulties, the system for training psychologists in Ukraine continues to evolve, adapting to contemporary requirements and societal needs.

Motivational systems play a crucial role in the training of psychologists, as they not only influence academic performance but also shape the readiness of future professionals for their careers. Understanding how motivation affects the learning process and professional development is key to preparing psychologists who will work with people in the future and help them resolve psychological problems, often related to motivational aspects. Motivational systems in the training of psychology specialists operate at several levels, each aimed at fostering a sustained interest in the profession among higher education students, developing personal and professional qualities, and increasing their engagement in the learning process.

At the initial stages of training psychologists, it is crucial to develop students' intrinsic motivation, which is rooted in their interest in the subject, desire to help others and self-development. Lecturers can stimulate intrinsic motivation by offering interesting and practical tasks, engaging students in discussions and debates, and allowing them to feel the significance of their future profession. Such motivation is particularly important for psychologists, as work in this field requires not only knowledge but also deep personal involvement, emotional resilience, and a desire to help others. An important aspect of motivational systems is also extrinsic motivation, which includes receiving grades, scholarships, participating in conferences, publishing research papers, and so on. It helps students maintain interest in learning, especially at stages when intrinsic motivation may weaken. Higher education institutions can create motivational programs that include incentives for students who demonstrate a high level of achievement, activity in research, and participation in the university's public life.

During the training of psychologists, professional motivation is developed, which is central to their future careers. Professional motivation is associated with understanding the significance of the psychology profession, feeling a sense of responsibility for the lives and well-being of others, and striving for success in their professional activities. Educators can support this motivation by providing students with opportunities to participate in real projects, undertake internships at various institutions, and introduce

them to the success stories of renowned psychologists. Professional motivation is critically important, as it encourages students to engage in continual self-improvement, acquire new knowledge and skills, and achieve high performance in their work. Furthermore, it is essential to foster a motivation for ongoing self-development and self-directed learning. Psychology, as a discipline, is constantly evolving, with new theories and approaches emerging, making it necessary for psychologists to continually update their knowledge and refine their professional skills. Educators can stimulate this motivation by recommending literature for independent study, organising seminars, workshops, training sessions, and other activities that promote self-development. Collective motivation also plays a vital role in the training of psychologists, as it encourages teamwork, support, and mutual assistance among students. This is particularly significant, given that the profession of psychology often involves working in teams, such as in clinical or educational settings. Collaborative efforts on projects, group tasks, discussions, and participation in student organisations contribute to creating a positive atmosphere within the learning community, thereby enhancing educational motivation.

A theoretical model of a motivational system for psychologists in various professional environments, particularly in medical clinics specialising in aesthetic medicine, should consider the specific nature of the work, the psychological needs, and the expectations of employees. At the core of this model lies the integration of classical motivational theories, taking into account the unique factors that influence the motivation of psychologists. To build an effective motivational system, it is advisable to consider the following classical motivation theories: the hierarchy of needs by A.H. Maslow (1943), the theory of two-factor motivation by H. Herzberg (1993), and expectancy theory by V.H. Vroom (1964) are foundational concepts in the psychology of motivation and have significant implications for future psychologists. Each of these theories offers a unique approach to understanding motivation and can be used to create effective motivational systems in various domains, including organisational settings and professional activities. The hierarchy of needs by A.H. Maslow, the theory of two-factor motivation by H. Herzberg, and the expectancy theory by V.H. Vroom are fundamental concepts in the psychology of motivation that hold significant relevance for future psychologists. Each of these theories offers a unique approach to understanding motivation and can be utilised to develop effective motivational systems across various domains, including organisational environments and professional practice.

A.H. Maslow (1943) describes five levels of needs that form the basis of individual motivation. This hierarchy comprises physiological needs (such as food, water, and safety), safety needs (including stability and protection), social needs (such as love and belonging), esteem needs (encompassing respect and recognition), and self-actualisation needs (focusing on personal development and the fulfilment of potential). A.H. Maslow asserts that lower-level

needs must be satisfied before an individual can aspire to higher-level needs. For psychologists, understanding this hierarchy aids in recognising which needs of clients or employees may be pertinent at any given moment, and how motivation can be enhanced by addressing these needs. In this context, the model should ensure the fulfilment of employees' fundamental needs, starting from physiological needs (such as salary and working conditions), progressing through safety and stability needs, to social needs (belonging to a team and support), esteem needs (recognition and achievement), and self-actualisation needs (opportunities for development and career advancement).

The theory of two-factor motivation by H. Herzberg (1993), also known as the hygiene-motivation theory, divides the factors influencing job satisfaction into two categories: hygiene factors and motivators. Hygiene factors, such as working conditions, salary, and relationships with colleagues, are necessary to prevent dissatisfaction but do not provide long-term motivation. Motivators, such as achievement, recognition, and opportunities for advancement, directly contribute to increased job satisfaction. For psychologists, understanding this distinction is crucial as it aids in the development of comprehensive motivational systems that not only eliminate dissatisfaction but also promote active engagement and development among employees.

The classical theory of motivation includes the expectancy theory by V.H. Vroom (1964), which posits that employees' motivation depends on their expectations regarding the outcomes of their efforts (expectancy) and the value they place on these outcomes (valence). Consequently, the model should incorporate a clear definition of goals, expected results, and rewards that align with the achieved outcomes. According to this theory, individuals assess the likelihood of attaining desired results and their value to themselves. The theory comprises three main components: expectancy (the probability that effort will lead to the desired outcome), instrumentality (the likelihood that achieving the outcome will result in receiving a specific reward), and valence (the value of the reward to the individual). For future psychologists, understanding these components is vital, as it aids in creating conditions where employees or clients can clearly see the connection between their efforts and the attainment of desired results, thereby enhancing their motivation. Applying these theories in the professional activities of psychologists enables them to better understand motivational mechanisms and effectively influence the motivation of others. This may involve developing personalised motivational strategies, improving working conditions, providing clear pathways for career advancement, and ensuring adequate recognition of achievements.

Studying these theories provides psychologists with the necessary tools to create effective motivational systems that consider various aspects of motivation and individual needs, which is crucial for successful professional activity. Future psychologists work in high-stress environments, so a motivational system model should consider the specific factors presented in Figure 1.

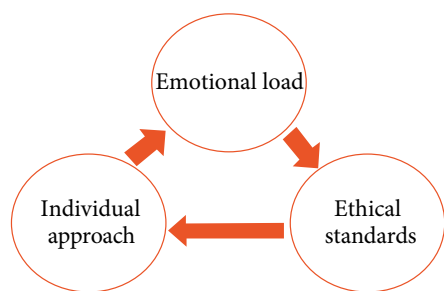


Figure 1. Specific factors of the motivational system model
Source: compiled by the author based on O. Salim *et al.* (2022)

The motivational system should incorporate elements that help reduce levels of emotional burnout. These can include both tangible and intangible incentives such as psychological support, opportunities for rest, and a reduction in workload during periods of stress. Psychologists are also obligated to adhere to high ethical standards, which can limit their flexibility in certain situations. The motivational system should support employees in upholding these standards by providing them with the necessary resources and support. Each psychologist has their own working style, so the motivational system should be flexible enough to accommodate individual differences and needs. In medical clinics specialising in aesthetic medicine, psychologists encounter clients who have high or unrealistic expectations regarding outcomes. This creates additional pressure and can impact employee motivation. The model should consider the need to support psychologists in working with demanding clients, providing opportunities for consultation and support in challenging cases. The motivational system should also encourage ongoing professional development and the delivery of high-quality services, which will help the clinic maintain a competitive position in the market.

The elements of the motivational system include both financial and non-material incentives. Salaries should be competitive and commensurate with the qualifications and experience of psychologists, which will encourage prospective professionals. Additional bonuses for achieving specific outcomes, such as high client satisfaction or the successful resolution of complex cases, as well as gift certificates, paid leave, and additional benefits, are also valuable financial incentives. In terms of non-material rewards, regular recognition of employees' achievements at both team and management levels is essential. There should be ongoing

opportunities for professional development, including access to training, workshops, conferences, and other avenues for skill enhancement. Conditions should be created for career advancement, as well as the expansion of responsibilities and duties. For future psychologists to work successfully, it is vital to continually provide them with access to psychological support in cases of emotional burnout or other challenging situations. Furthermore, it is important to foster a supportive social environment where employees can receive assistance from colleagues and management, allowing for flexible working hours tailored to individual needs, and encouraging a healthy balance between professional activities and personal life.

The proposed theoretical model of a motivational system is multi-dimensional and encompasses various factors that influence the motivation of psychologists in professional settings. A specialist from the aesthetic medicine centre Esthetology indicated that recognition of their work, both from management and patients, is of paramount importance to them. Additionally, they value opportunities for ongoing professional development, such as attending conferences and seminars. While financial compensation is certainly significant, feeling valued and having the opportunity to learn new skills is more crucial. A specialist from the dermatology centre at the Institute of Beauty "Aquarelle", noted that their motivation is influenced by working conditions and relationships within the team. Feeling supported by colleagues and management is a strong motivator. A fair distribution of workload and, of course, the level of remuneration are also important factors.

A participant in the survey from Beseda Aesthetic Clinic highlighted the opportunity to apply their professional knowledge in practice by participating in complex and interesting procedures. They also valued management recognising their achievements and providing all the necessary working conditions, such as modern equipment and administrative support. A specialist from the modern Elixir Clinic felt motivated when management ensured transparent and fair operational rules. For instance, a clear understanding of performance evaluation criteria and opportunities for career advancement. While financial incentives are important, they should be part of an overall motivational system that includes respect for the employee and opportunities for their development. According to the responses provided in the survey by specialists working in clinics, the importance of motivational factors varied for each participant. These data are presented in Table 1.

Table 1. Results of participant responses

Specialist	Recognition	Professional development	Financial incentives	Working conditions	Team relations	Overall assessment
1 st	9	9	7	5	5	35
2 nd	4	6	9	9	9	37
3 rd	7	10	6	7	4	34
4 th	8	7	7	7	6	35

Source: compiled by the author

The ratings compiled based on the key motivational factors mentioned during the interviews reflect the individual priorities and approaches of each specialist. This helps to identify general trends and specific motivational requirements within clinical practice. Therefore, Table 1, with its ratings, demonstrates the importance of each factor within the overall motivational system for a particular specialist, allowing for the adaptation of motivational approaches to the needs of employees and ensuring more effective personnel management. An analysis of the types of motivation applied to both groups is presented in Table 2.

This data provided a deeper understanding of what drives people's actions and how these motivations influence their behaviour and performance. Such analysis is key to developing effective motivational systems that take into account the individual characteristics of employees. Studying different approaches to motivation, such as intrinsic and extrinsic motivation, helps to determine which incentive methods will be most effective in a specific environment. This, in turn, contributes to increased productivity and job satisfaction, which is crucial for achieving organisational goals.

Table 2. Characteristics of motivation types

Group	Types of motivation	Description
Experimental	Individual material incentives	Each employee received bonuses based on personal achievements and performance outcomes. This could include financial incentives or funding for additional training
	Professional development	Employees were allowed to attend specialised courses and training sessions, which contributed to their professional growth and skill enhancement
	Feedback	Regular meetings with management were held to discuss successes and challenges at work. Employees could make suggestions for improving working conditions and motivational programmes
	Social support	A positive atmosphere was fostered within the team, with events organised to strengthen relationships among employees
Control	Fixed material incentives	Employees received standard bonuses and incentives for completing specific tasks. Material incentives were uniform for all and did not account for individual needs
	General meetings	Instead of individual meetings, general meetings were held to discuss overall issues without focusing on personal achievements and challenges
	Basic non-material incentives	Minimal social events, such as corporate celebrations, were provided, but there was no ongoing support for a friendly atmosphere within the team

Source: compiled by the author

The effectiveness of the motivational systems was assessed using criteria such as job satisfaction, work produc-

tivity, readiness for professional development, and the level of engagement in the work process (Table 3).

Table 3. Comparison of the research results between the experimental and control groups

Criteria	Points	
	Experimental group	Control group
Job satisfaction	8	6
Labour productivity	7	5
Readiness for professional development	6	6
Involvement in the work process	7	6

Source: compiled by the author

As evidenced by the results, the experimental group achieved higher scores across all criteria, with an average score of 7 points compared to 5.75 points for the control group. This indicates that the standard model of the motivational system requires further refinement and integration to become more effective in clinics. The superior performance of the experimental group may be attributed to the fact that the new motivational system model was more flexible and adaptive, taking into account the individual needs of employees and stimulating their professional activity more effectively. Furthermore, the new model likely

offered a better balance between external and internal motivators, which enhanced overall employee satisfaction and motivation. The low scores of the control group suggest that traditional approaches to motivation do not always account for contemporary trends and requirements, particularly changes in the value orientations of employees that could positively impact their productivity. This highlights the need for continued improvement and integration of new approaches into standard motivational system models, which will help enhance their effectiveness in clinics. Therefore, the results obtained demonstrate that to ensure

higher levels of motivation and productivity among employees, it is crucial to consider individual needs and adopt comprehensive approaches to motivation management.

To enhance the training of psychologists in the creation and management of motivational systems, it is essential to focus on several key aspects. Academic programmes should incorporate courses that deepen students' understanding of motivational theories and their practical applications. This could include an examination of various motivation models, such as the hierarchy of needs by A.H. Maslow (1943), expectancy theory by V.H. Vroom (1964), and the self-determination theory, which will enable students to better understand the diverse motivational factors and their influence on behaviour. Equally important is the development of practical skills in creating and managing motivational systems, which should involve the inclusion of training sessions and simulations where students can model real-life situations and find optimal solutions for enhancing motivation. Additionally, it is recommended to conduct regular workshops with practising professionals who have successful experience in developing motivational systems across various fields. This will allow students to become acquainted with contemporary trends and innovative approaches in this domain. Furthermore, it is crucial to provide students with opportunities for internships within organisations, enabling them to participate directly in the development of motivational programmes and assess their effectiveness in practice. Improving the training of psychologists in this area involves the development of research skills, allowing students to independently conduct scientific studies aimed at exploring the effectiveness of various motivational strategies and their adaptation to specific organisational contexts and needs.

DISCUSSION

Preparing future psychology professionals to develop motivational systems requires not only theoretical knowledge but also practical skills in applying various motivational techniques. Research findings have shown that the effectiveness of motivational systems significantly impacts performance in both professional and personal life. One of the key aspects of training psychologists is understanding the nature of motivation and the ways to stimulate it. Research shows that the successful development of motivational systems is based on a combination of knowledge from personality psychology and social psychology. For instance, findings from studies by C.L. Hassett *et al.* (2021), F. Satka & E. Garneva (2024) indicate that motivational systems that take into account individual personality traits lead to a significant increase in effectiveness both in educational institutions and corporate structures. These results align with the conclusions of the present study, which confirms the necessity for individualisation of motivational approaches in the training of future psychologists. The study of theoretical models of motivation, such as the theory of self-actualisation by A.H. Maslow (1943), and expectancy theory by V.H. Vroom (1964), plays an important role in

the preparation of psychologists. Several studies, including those by R. Aralbaeva *et al.* (2024) and C. Zhang *et al.* (2024), have demonstrated that the application of these theories in the learning process enables students to better understand the internal and external motivators of behaviour. This research also found that future psychologists who have mastered these theories are better prepared for the practical application of motivational systems in their future professional activities.

Psychological and pedagogical factors also play a significant role in the training of future psychologists. The results of the study showed that motivational systems which take into account the individual characteristics of students, such as their needs and interests, contribute to a higher level of material comprehension. Research by L. Ližbetinová *et al.* (2020) also revealed that a student-centred pedagogical approach is crucial for effectively preparing future psychologists to develop motivational systems. The findings regarding the importance of balancing theoretical knowledge with practical skills align with the conclusions of N.E. Grunberg *et al.* (2024) and M. Crichton *et al.* (2024), who noted that theoretical education provides a solid foundation for understanding the principles of motivation; however, without practical application, this knowledge may remain abstract and ineffective in real-world situations. This study further confirmed that higher education students who engage in practical training during their preparation demonstrate a higher level of competence in creating and implementing motivational systems. Involving students in active learning, which includes real-case scenarios, training sessions, and internships, allows them to apply theoretical knowledge in practice. This approach has also been supported by other researchers. For example, studies by L.M. Daniels & B.S. Dueck (2022), N. Jovanovski *et al.* (2023) showed that students who regularly work with real-life situations exhibit greater confidence in their knowledge and skills, as well as a better understanding of complex motivational processes. These conclusions are consistent with the findings of this study.

It has been found that motivation is a complex and multifaceted phenomenon that requires an interdisciplinary approach. Future psychologists need to acquire knowledge not only in psychology but also in other disciplines such as sociology, economics, and pedagogy, as this enables them to create more effective and adaptive motivational systems. Research by J.-J. Reinders and W. Krijnen (2023) demonstrated that an interdisciplinary approach fosters a broader understanding of motivational processes among students and allows them to integrate various methods into their practice more successfully. This study also identified that students who undertook courses in diverse disciplines displayed a deeper understanding of motivational principles and a greater readiness to apply their knowledge in various contexts. This underscores the importance of implementing interdisciplinary programmes in the training process for psychologists. Individualised learning is another crucial factor in preparing future psychologists. As noted by

M. Gulbaram *et al.* (2021) and O. Siu *et al.* (2024), motivational systems should be tailored to the needs of each individual student, which allows for a better consideration of their personal interests, learning styles, and career ambitions. These findings align with this study, as individualised approaches to learning contribute to students' better understanding of the fundamentals of motivation and their ability to apply this knowledge effectively in practice. Higher education students who receive personalised instruction have the opportunity to delve deeper into topics that interest them and develop specialised skills that they can utilise in their professional careers. This also enhances their motivation to learn, which is a significant factor in the development of their professional competencies.

The results obtained indicate that the effective use of feedback is a crucial element in preparing future psychologists. Research by N.Z. Maharani *et al.* (2024) and Y. Wang *et al.* (2024) suggests that providing students with regular and constructive feedback facilitates their development and allows them to better understand their strengths and weaknesses. This study also revealed that students who receive such feedback from instructors regularly are better prepared to create and manage motivational systems. Furthermore, feedback assists students in adjusting their approaches and strategies, enabling them to acquire new knowledge and skills more quickly and effectively. This contributes to enhancing their independence and self-confidence, which are vital factors in the professional training of psychologists. Research by G. Chemsu *et al.* (2024) demonstrated that future psychologists who develop a high level of emotional intelligence possess a better understanding of both their own emotions and the emotions of others. This capability allows future professionals to influence motivation more effectively and provide emotional support to their clients. This study identifies the development of emotional intelligence as an essential component in the training of future psychologists, particularly in the context of creating motivational systems. Students with a high level of emotional intelligence are better able to tailor motivational strategies to the individual needs of their clients, thereby increasing the effectiveness of their work.

Cultural factors also have a significant impact on the effectiveness of motivational systems. Research by T. Ponomarenko & V. Zelenin (2022) revealed that motivational strategies that take into account cultural differences are more effective in an international context. P. Silverstein *et al.* (2024), J. Rhodes & N. Vorontsova (2024) found that motivational approaches that work in one culture may be less effective in another due to differences in values, norms, and expectations. This study also confirms the need to consider cultural factors in the training of psychologists. Students who are familiar with the cultural characteristics of different people are better prepared to work in an international environment and can create motivational systems that take these differences into account.

As revealed, upon completion of their studies, future psychologists should be ready to apply motivational systems

in their own professional activities. Research by S. Gindidis *et al.* (2020) and E. Altintas *et al.* (2022) has shown that graduates who have undergone specialised training in motivational systems demonstrate higher success in their professional careers. This study confirms these findings, indicating that trained professionals are better equipped to handle challenges related to motivation in both educational and corporate settings. In particular, students who have acquired skills in creating and managing motivational systems are able to work more effectively with diverse groups of clients, adapting motivational strategies to their individual needs. This enhances their competitiveness in the job market and enables them to achieve higher results in their professional careers.

Preparing future psychologists to develop motivational systems is a complex and multifaceted process that requires both theoretical knowledge and practical skills. The results of this study are supported by the findings of other researchers, indicating the importance of individualised approaches, the use of theoretical models, practical training, and modern technologies in this process. At the same time, there is a need for further enhancement of curricula to align with current labour market demands and ensure a high level of readiness for future psychologists in developing effective motivational systems.

CONCLUSIONS

The training of psychologists in Ukraine is characterised by a comprehensive approach that includes a solid theoretical foundation, practical experience, the development of ethical norms, an interdisciplinary approach, a focus on contemporary challenges, research activities, and international cooperation. This ensures the training of highly qualified specialists capable of working effectively in various conditions and providing the necessary psychological support to the population. Despite certain challenges, the Ukrainian education system continues to improve, training professionals who meet high standards of professional activity.

In the research aimed at preparing future psychologists to create motivational systems, two groups were used: a control group and an experimental group. The control group worked using traditional methods employed in educational institutions for developing motivational competencies, while the experimental group implemented a new model for creating motivational systems. The results obtained showed that participants in the experimental group demonstrated a significantly higher level of readiness to create motivational systems compared to participants in the control group. This reflects the fact that the application of new approaches in the training of future psychologists can significantly improve their professional skills, particularly in the area of motivational counselling. Specifically, the new model contributed to the development of a deeper understanding of motivational theories, as well as greater confidence in the practical application of this knowledge.

Furthermore, participants in the experimental group demonstrated a greater awareness of individual approaches

to motivation, suggesting that the new model of training psychologists may contribute to the more effective development of individualised motivational systems for different categories of clients. This is particularly important in the context of the contemporary challenges faced by psychologists working with diverse populations. The conducted research has confirmed the effectiveness of the new model of training psychologists in creating motivational systems. Further studies could focus on expanding the sample to include a larger number of educational institutions and regions, which would allow for more representative results.

An important direction for future research is also the examination of the long-term effects of the new model for creating motivational systems, which will help assess its impact on the professional activities of graduates in real-world conditions.

None.

None.

ACKNOWLEDGEMENTS

CONFLICT OF INTEREST

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Павло Блешмудт

Кандидат психологічних, викладач

Міжнародний гуманітарно-педагогічний інститут «Бейт-Хана»

49000, пл. Успенська, 5, м. Дніпро, Україна

<https://orcid.org/0009-0004-8953-3037>**Підготовка майбутніх психологів до створення мотиваційних систем**

Анотація. Метою дослідження було вивчення процесу розробки системи мотивації у сфері естетичної медицини, майбутніми фахівцями психології. Методологія включала поєднання методів моделювання та експериментування у медичних клініках, де ефективність створених стажерами мотиваційних систем була перевірена та оцінена. Дослідження поєднувало теоретичну інформацію з практичним застосуванням, що дозволило детально проаналізувати, як саме мотиваційні системи можуть бути ефективно розроблені та впроваджені майбутніми фахівцями у сфері психології. Основні результати показали, що практична участь у реальних умовах, таких як медичні клініки, значно покращує розуміння та здатність стажерів створювати ефективні мотиваційні системи. Дослідження виявило, що поєднання практичного досвіду з професійним середовищем надає важливі інсайти, яких суто теоретичний підхід не може забезпечити. Дослідження підтвердило, що реальний досвід у медичних клініках допомагає майбутнім психологам краще зрозуміти специфічні потреби та виклики, що постають при розробці мотиваційних систем. Практичні заняття в таких умовах дозволяють адаптувати теоретичні знання до реальних ситуацій, що значно підвищує ефективність створюваних мотиваційних систем. Майбутні психологи, які отримали можливість працювати в клініках, виявили високий рівень навичок у вирішенні практичних завдань, пов'язаних з мотивацією персоналу, що свідчить про значний внесок практичного досвіду в їхню підготовку. У дослідженні підкреслено важливість інтеграції практичного досвіду з теоретичною підготовкою у процесі навчання майбутніх психологів, особливо у контексті створення та впровадження мотиваційних систем. Результати можуть бути використані учасниками освітнього процесу для вдосконалення навчальних програм і підходів до підготовки майбутніх фахівців, зокрема, для розробки спеціалізованих курсів та тренінгів з мотиваційного консультування

Ключові слова: професійний розвиток; стратегії; інструменти; медичні клініки; можливості та ризики

**НАУКОВИЙ ВІСНИК
МУКАЧІВСЬКОГО ДЕРЖАВНОГО УНІВЕРСИТЕТУ
СЕРІЯ «ПЕДАГОГІКА ТА ПСИХОЛОГІЯ»**

Науковий журнал

Том 10, № 3, 2024

Оригінал-макет видання виготовлено
у редакційно-видавничому відділі Мукачівського державного університету

Відповідальний редактор:

А. Конюх

Редагування англomовних текстів:

А. Кравченко

Комп'ютерна верстка:

К. Пилипенко

Підписано до друку 25.09.2024 р.

Формат 60*84/8

Умовн. друк. арк. 12,8

Тираж: 300 прим.

Адреса видавництва:

Мукачівський державний університет
89600, вул. Ужгородська, 26, м. Мукачево, Україна
E-mail: info@pp-msu.com.ua
<https://pp-msu.com.ua>

**SCIENTIFIC BULLETIN
OF MUKACHEVO STATE UNIVERSITY
SERIES “PEDAGOGY AND PSYCHOLOGY”**

Scientific Journal

Vol. 10, No. 3, 2024

The original layout of the publication is made
in the publishing department of Mukachevo State University

Managing Editor:

A. Koniukh

Editing English-Language Texts:

A. Kravchenko

Desktop Publishing:

K. Pylypenko

Signed for print 25.09.2024.

Format 60*84/8

Conventional printed pages 12.8

Circulation 300 copies

Publishing Address:

Mukachevo State University
89600, 26 Uzhhorodska Str., Mukachevo, Ukraine

E-mail: info@pp-msu.com.ua

<https://pp-msu.com.ua/en>