Arthur Stanishovskyi
Lviv State University of Life Safety, Military unit, Lviv, Ukraine
E-mail: arturstepanovi4@gmail.com
ORCID: https://orcid.org/0000-0002-4414-0000

The use of interactive methods in the training of tactical officers in military educational institutions

Abstract

The *purpose* of this article is to investigate the optimization of the learning process in higher military educational institutions. The paper studies the concept of interactive learning, its basic principles and key features (expanding the boundaries of teachers' cognitive activity, observing the principles of mutual learning, modeling success situations, using different forms of work/formats of learning and activities within one class, problem-based and reflective nature of the class). *Methodology*. The need to integrate VR-technologies and artificial intelligence technologies into the educational space is emphasized. The disadvantages of interactive learning and situations that exclude the expediency of its use are analyzed. The advantages of the use of interactive learning methods in working with students of higher education institutions are systematized. *Results*. The classification approaches are defined and the regularity of their formation in the pedagogical literature is characterized. The technologies that are most often used by university teachers when working with students are analyzed. Examples of domestic and foreign educational educational platforms containing high-quality content for independent and collective study of students are given. *Practical implications*. The need to turn to interdisciplinary assignments based on individual creative work is emphasized. *Value/originality*. The basic principles of interactive lectures and interactive practical seminars are established. Using the examples of classes on history, foreign language, psychology, mathematical and software support of automated systems functioning, military topography, disciplines related to combat use of units armed with portable anti-aircraft missile systems, use of radio engineering units and military units of the USSR Air Defense Forces, the methodology of interactive technology use is shown.

1 Introduction

Problematic of improving the effectiveness of teaching in higher education is at the intersection of pedagogy, psychology, philosophy, and is a set of means and ways to improve the effectiveness of teaching students, their assimilation of the material worked out, the ability to test their knowledge in the practical plane. Just as importantly, teachers try to develop and apply educational technologies that can generate interest both in the knowledge provided at the respective institution and in students' self-education as an integral component of their future development and career success.

With the global pandemic and socio-political changes that have necessitated the transition of higher education institutions to remote education, the need to improve the existing methods and develop new pedagogical solutions – has certainly intensified (Semenova, Lebedeva, & Polezhaeva, 2020).

The practical unpreparedness of the educational and scientific community for the transition to a combined mode (online-offline) of interaction is appropriately reflected in the results of statistical surveys. Foreign studies, in particular those conducted in universities in the Netherlands, confirm the results of the domestic survey. Moreover, 52.6% of students are concerned about how the pandemic will affect their studies, 43.3% feel that distance education has negatively impacted their academic performance, and 37.3% cannot get internships/practices/fitness training, especially if it is an important part of their future job (medicine, physical education, military education, etc.). In addition, 56.3% have difficulty concentrating, 52.2% experience loneliness, and 39% experience tension (Yee, 2020).

Accordingly, under such conditions, there is a reasonable need to find methods and techniques that would be able to solve these problems in the process of distance learning, as well as in the classroom.

2 Analysis of recent research and publications

This issue was in the circle of scientific research of such scholars as Chaoqun (2022), who studied methods and technologies of interactive learning, carefully developed classification approaches and typology criteria. The team of authors (Sekerin, Gorokhova, Dudin, Danko, & Nikolaykin, 2018) not only revealed the pedagogical essence of interactive methods application, but also considered the feasibility of their use as a marketing tool. Maican & Cocoradă (2021) operate on this issue from the perspective of academic disciplines, taking foreign languages as the basis. Focusing on the rationality of introducing information and communication technologies, the author concludes in terms of the positive impact of web quests when working with students, cites the methodological requirements for class accompaniment (Sekerin, Gorokhova, Dudin, Danko, & Nikolaykin, 2018). Ježková Petrů (2021) devoted her dissertation research in which she summarized theoretical approaches to the formation of interactive classes, outlined their effectiveness criteria, defined the structure, goals, and psychological features of student learning. At the same time, there are no works by domestic researchers devoted to examining this issue specifically through the prism of training tactical officers in specialized educational institutions, while military education requires modernization and changes in pedagogical approaches.

The purpose of this paper is to study the specifics of interactive methods and directions of their application in the work with military cadets.

3 Presentation of the main material

The basis of modern education in higher education institutions is a close cooperation of teacher and student through the application of rational and effective approaches, methods, technologies, forms of learning, focused on a competitive graduate. In this context, verbal techniques of working with teachers are particularly dominant, helping to jointly achieve solutions to problematic issues in the classroom, thus ensuring the development of personality. Adapted to the conditions of real life and at the same time the specifics of work, interactive teaching methods are becoming increasingly popular in teaching practices, both at the level of general education institutions, and in the process of higher education.

In the scientific literature under interactive learning (a combination of two Latin words "inter" (between, among, mutually) and "activus" (active): that is based on the interaction) is commonly understood as the active interaction of all participants in the educational process, polylogue, based on the principles of dynamic conversation and cooperation (Latygina, Yuvkovetska, Dubinina, Kokhan, & Mykhailova, 2022). The above opinion is developed by I. M. Novak, who believes that interactive learning should be understood as mastering a certain experience of using the obtained knowledge in a process characterized by a high level of activity, sufficiently significant duration of learning activities, independent creative work of students, increased level of motivation and emotionality, constant interaction between the group and the teacher. Kutbiddinova, Eromasova, and Romanova (2016) see this methodology as a special source of learning that differs from traditional learning primarily in that equality of all participants and joint participation in working on tasks develops communicative skills, including not only oratorical abilities, but also the ability to listen and consider the opponent's position, make common decisions, be tolerant of colleagues, participate in discussions, justify their point of view, etc. In this case, as a team of authors aptly notes, the effective use of the maximum number of such methods can increase the competitiveness of certain specialties in the university, respectively, from the pedagogical plane of interactive learning becomes a marketing tool (Gorbanyova, 2016). Interactive learning can be effective only in full compliance with the basic principles outlined in the pedagogical theory. In particular, it is about the principle of activity (new knowledge is formed on the basis of the existing background); openness (acquired knowledge is accompanied by the solution of situational problems, the solutions of which should lie exclusively within the framework of the studied issues); freedom of choice (participants are free to find the best form of interaction, to express their point of view); feedback (feedback is an integral part of learning. The instructor, at a minimum, should enter into a discussion at the stages of changing the coordinates of the issue consideration, summarizing, evaluating the results of the lesson, identifying the possibility/expediency of discussing the very format of the lecture or seminar). This elaboration fully correlates with the results of the research that entered the science called Dale's cone (information perception pyramid). The percentage of productivity from various forms of learning activities allows us to conclude: the more actively the listener is involved in learning, the better he or she learns knowledge and in the long run – is able to create, analyze, implement, and apply it independently in practice. Accordingly, the analysis of theoretical approaches to the definition of the concept, as well as the basis on which the practical application of interactive learning, allow to identify its features: expanding the boundaries of cognitive activity of teachers (group, creative interaction, multilateral communication – each of these methods is used in the educational activities to stimulate students to acquire new knowledge and produce the results of acquired); observing the basics of mutual learning (each student must show initiative and express his or her own opinion about the subject, get to the truth in

an active dialogue, listening tolerantly and confirming (refuting) the position of the other interlocutor); modeling the situation of success (it is important to create a comfortable environment, provide a welcoming atmosphere, appeal to the progress of both the individual student and the group as a whole); application of different forms of work (group, individual, paired, team, etc.), learning formats (work with different sources of information, research processes, creative tasks, business games, etc.), types of activities within one class (social, physical); problem-oriented and reflective nature of the lesson.

Interactive learning does not exclude, but rather encourages the use of computer technology. Modern education includes VR-technologies and artificial intelligence technologies, universities develop courses in electronic educational environments. Although by their nature digital resources, on the contrary, promote distance, isolation of teachers from each other, with the right approach such negative aspects are easily transformed into positive ones. In particular, the organization of the process of communication in a remote format is greatly facilitated if interactive technology is combined with the cloud. Rautela, Sharma, & Virani, (2022) have found that CSCL, a pedagogical approach based on collaborative learning with an active exchange of information between participants for the collaborative construction of knowledge, is highly effective in exploring the technology of collaboration in an interactive practice system. This can be either a software environment based on networked computers (other means of communication) or remote access platforms (stand-alone resources). Determining the best service is one of the most important steps and preparation for the lesson, because it will set the tone and influence the effectiveness of the activity. Often there are situations when a digital resource offers excellent service, the interface is intuitive, but focuses on one aspect of interactive work (Sava, 2016). The challenge for the instructor is to choose the platform with the most appropriate and relevant dataset that will relate to the needs of the learning process.

Certainly, there is no reason to claim that interactive learning is a universal panacea for all the educational problems inherent in modern learning centers. Like any methodology, it has its drawbacks, some of which are due to time determinants. First of all, it concerns the teacher's readiness to apply this methodology in pedagogical practice. As a minimum, this implies fluency in a set of computer programs and applications, and the ability to use their potential. As a rule, universities practice the use of digital platforms from Google for Education (Google Docs, Google Drive, Gmail, Google Slides, Google Scholar, Google Meet), web resources (including for distance learning: Moodle, Google Classroom, Zoom, Microsoft Teams, ClassDojo, Classtime, Skype), resources with thematic learning video content, digital applications.

At the same time, the development of information and communication technologies is characterized by a rapid accumulation of proactive IT innovations useful in working with students. Educational institutions must serve as a forcing agent for advanced advances, the use of which is useful for youth development. This substantiates another problem: the problem of adaptation for all participants. As a rule, students are very enthusiastic about using the potential of computer techniques, games, quizzes, but due to their nature, creative and communicative abilities, one should be prepared for the fact that some of them will find it harder to get used to certain techniques, internal discomfort will serve as a barrier to this. In this case it is necessary either to integrate innovations step by step, or to conduct a preliminary conversation, outlining the prospects and achievements expected as a result of the experiment. The number of methods in a teacher's arsenal should by no means be limited. For example, K. Yee's research summarizes and classifies 289 interactive methods of classroom, distance and online learning: paired and group, using social networks, mobile and tablet devices, game technologies, student presentations; brainstorming, interactive interaction in chat, etc. That is why, depending on the discipline, there is a legitimate question about the strategy of choice and effectiveness of one or another technology in relation to a group of students. In conclusion, it should be noted the peculiarities of working with students who have individual contraindications (inclusive groups, teachers with developmental disabilities). The potential effect of using interactive teaching techniques must be taken into account by the teacher in advance (for example, it is not recommended to use the technique "Kaleidoscope" when working with students who suffer from chronic neurological diseases, such as epilepsy).

In scientific sources there are several approaches to the classification of interactive teaching methods. Thus, in the dissertation study by Serdyuk T. four main groups are identified: by didactic purpose (development of key competencies, activity-practical sphere, creativity, self-management mechanisms), dominant teaching methods (problem-research, research, information, simulation, game) teaching tools (techno-oriented, homo-oriented), forms of organization of learning and cognitive activities (group, individual, paired, collective) (Chaoqun, 2022). Some scholars limit themselves to two groups: non-simulation (heuristic conversation, problematic lecture, class discussion, research laboratory work) and imitation (mock activities, business game, collective mental activity, pedagogical assignments) (Armson & Whiteley, 2010). The plurality of interpretations of the concepts of "interactive learning" and variability of classification approaches are due to a wide range of features accumulated in this method. Own pedagogical experience and practice of interactive teaching methods allow

to form a list of the most effective and versatile technologies in working with students of the 1st-4th years: "brainstorming", focus groups, case technology, training, training group discussion, "round table", active problem-situation analysis and others. Accordingly, the methods of interactive learning is understood as a system of ways of purposeful intersubjective interaction between a teacher (teacher) and students, aimed at solving educational problems of professional training of future social educators in the process of educational and cognitive activities of a higher educational institution (Huang, Lu, Huang, Yin, & Yang, 2020). However, it should be noted that not for all educational specialties the use of interactive methods is a typical format of interaction. This is especially true for higher military educational institutions, where the educational process is regulated not only by the general legislation on higher education in Ukraine, but also by specialized Laws and departmental regulations. The specific nature of such education determines its conservatism and excessive discipline in comparison with other educational directions. However, the effectiveness and effect of the use of interactive technology indicates the need to adjust the plan for a lecture or seminar class by saturating it with elements of interactive learning tools.

Thus, the fundamental principle of an interactive lecture is that theoretical material is presented in small, structured portions, followed by questions that students must answer and a discussion of the material studied. Creating an interactive lecture complicates the process of conducting a class, as the instructor must always be prepared to answer the questions posed and have a good understanding of the subject matter. In addition, the task of the teacher in the interactive educational process is not only the transfer of information, but also the organization of the lesson and management of students, which requires a very good psychological preparation. In terms of the efficiency of knowledge transfer and students' interest in the information received, this approach is the most successful and justified in modern conditions. Interactive history lectures accompanied by short blitz questions are most successful in training tactical officers. At the same time, the practice of such exercises after watching video clips on historical aspects that go beyond the scope of the syllabus. Together with first-year military students, we practice watching and further discussing or brainstorming on the results of the videos "The Controversy Around St. Bartholomew's Day massacre" and "The Myth of Richard II" on the PostScience resource. After working through a large block of questions on national history, we offer students to reconstruct their knowledge on their own by reviewing the course "The Modern History of Ukraine: From the Beginning of World War II to the Present Day" on the official Prometheus website. These kinds of additional assignments should

be at the junction of two or more disciplines. That's why the students are motivated to use foreign sources more, to watch educational videos in English. Such an opportunity is available on Udemy (EdEra) in the "humanities" block. High-quality content and visual accompaniment activates students' attention when watching the videos "Crimea: History and People" (English language), "Ukraine. Historie, Kultur og Identitet" (Norwegian language).

Interdisciplinarity as a basis for problem-setting lies at the heart of individual creative work. For example, students are asked to read the philosophical-historical article "What will wars be like in the future?" (Maican & Cocoradă, 2021) and present their opinion in the form of an essay: develop, refute, propose an authorial idea, etc. The practice of writing collaborative papers using Google Docs, demonstrating a collaborative Google Slides project, and the cross-platform Canva service are integrated into foreign language classes on a regular basis. As required by the principles of interactive learning, tactical level officers are free to choose the topic of their own project; the circles through which they plan to implement it. Of the prerequisites – compliance with established deadlines and the criteria for which the work is oriented (grammar, saturation of professional vocabulary, meaningful content, etc.). Demonstration projects on the topics "First Aid", "Basic Firefighting", "Personal Safety and Social Responsibility", "National Guard", "Operations", "Training Unit" were very interesting, first of all, for the first- and second-year students themselves. We use video materials from BBC Learning English, TED Talks, and Coursera to prepare for classes; the best training exercises are developed independently, using the potential of Quizlet (vocabulary building in game form with the help of cards), Kahoot! (team and individual games), Puzzlemaker. Loyalbooks, an aggregator of free audiobooks in English for different levels of proficiency, is recommended for constant use. In all, without exception, humanities classes we use quizzes with automated testing to check the knowledge gained. This set includes the capabilities of Google Forms, Learningapps (to provide feedback – Goformative), control with flashcards is available on the resource Studystack.

In general, the basic principles of improving the system of language training of military cadets and achieving professional foreign language proficiency are enshrined in the NATO standard STANAG 6001. It is substantiated that practical classes allow using all the possibilities of interactive teaching methods, increasing students' activity and their interaction with each other.

Psychological seminars are often accompanied by effective and time-tested techniques of interactive group work with adults. In particular, the technique World Café assumes formation of several groups for which the moderator (the instructor) gives a

certain task (with minor situational modifications), and after 15-20 minutes from the beginning of its implementation, participants mix up and continue to finish the project of the previous group, without changing the substance of the work done above. As a rule, this technology is most suitable for writing a training program, individual consultation. The instructor's main task is not so much to advise students as to keep track of time and determine that the new group is advancing an idea rather than duplicating what has been accomplished by previous participants. If the instructor needs to establish the contribution of each student, the main results of the work should be recorded on blackboards (including the use of a whiteboard), and in a separate document record the contribution of each. If in such classes the problematic issue is at the center of a lecture or seminar, the Fishbowl methodology, which by its essence implies active discussion, is more suitable for application. The group is divided into two circles: internal and external, in equal parts. Team members from the inside group discuss the problem, while the rest of the outside group listens intently. The team of the inside group has a free chair, so any of the members of the outside group can join and ask questions, take part in the discussion if they wish. In this way, differentiation of reasoning occurs and discussion skills are developed (Grygorieva, Mykhailova, & Humankova, 2021). Problem-search method of interactive learning is actively used to solve complex practical examples when mastering mathematical and software functioning of automated systems, military topography, disciplines related to the combat use of units armed with portable SAMs, the use of radio technical units and military units. It is important that students independently come to the most rational strategic decisions in the process of training, accordingly, the mission of the teacher comes down to teaching how to make balanced decisions, because in practice the life and health of the serviceman, his colleagues, the welfare of the country depend on it.

4 Conclusions

In today's labor market a qualified specialist with the ability to master new knowledge and skills to solve atypical professional tasks is of particular value. The formation of such skills through traditional training is ineffective, which means that the pedagogical and scientific community is in constant search of progressive technologies and methods. To replace the reproductive system of learning in higher education institutions is gradually integrating a creative system, where a special place is given to interactive learning. Accordingly, interactive learning – a special form of organization of cognitive activity, a way of learning new material by students in the form of their joint activities, in which all participants interact with each other, share information, solve problems together, model situations, evaluate the actions of others and their own behavior, integrated into a real atmosphere of business cooperation for consolidated problem solving.

In comparison with traditional forms of classes in interactive learning interaction between teacher and student is modified: the activity of the teacher gives way to the activity of teachers, and the main task of the teacher becomes the creation of conditions for their initiative. Moreover, the nature of these technologies allows both the consideration of individual student interaction with the teacher and information, mastering ways of cognitive and practical activity, and gaining valuable experience in teamwork on a common task. The prospects for further scientific research are seen in the algorithm for the formation of tactical officers in military educational institutions.

References

[1] Grygorieva, T., Mykhailova, O., & Humankova, O. (2021). Interactive methods of teaching foreign languages to adults. *Human Studies a Collection of Scientific Articles of the Drohobych Ivan Franko State Pedagogical University Series of "Pedagogy,"* (44), 36–45. doi:10.24919/2413-2039.12/44.5

[2] Rautela, S., Sharma, S., & Virani, S. (2022). Learner-learner interactions in online classes during COVID-19 pandemic: the mediating role of social media in the higher education context. *Interactive Learning Environments*, 1–16. doi:10.1080/10494820.2022.2093917

[3] Latygina, N. A., Yuvkovetska, Y. O., Dubinina, O. V., Kokhan, O. M., & Mykhailova, N. O. (2022). The ways of developing basic competencies in the study of foreign languages through interactive methods. *Journal of Curriculum and Teaching*, 11(1), 1. doi:10.5430/jct.v11n1p1

[4] Armson, G., & Whiteley, A. (2010). Employees' and managers' accounts of interactive workplace learning: A grounded theory of "complex integrative learning." *The Journal of Workplace Learning*, 22(7), 409–427. doi:10.1108/13665621011071091

[5] Maican, M. A., & Cocoradă, E. (2021). Online foreign language learning in higher education and its correlates during the COVID-19 pandemic. *Sustainability*, 13(2), 781.

[6] Sekerin, V. D., Gorokhova, A. E., Dudin, M. N., Danko, T. P., & Nikolaykin, N. I. (2018). Applying interactive marketing methods to improve the quality of university educational services. *Calitatea,* 19(163), 37–42.

[7] Gorbanyova, O. (2016). Interactive technologies in teaching a foreign language at higher educational establishment. *International Letters of Social and Humanistic Sciences*, 71, 54–59. doi:10.18052/www.scipress.com/ilshs.71.54

[8]   Ježková Petrů, G. (2021). Preference of methods and goals of further education from the social workers' Point of View. *Lifelong Learning*, 11(3), 225–241. doi:10.11118/lifele20211103225

[9]   Huang, A. Y. Q., Lu, O. H. T., Huang, J. C. H., Yin, C. J., & Yang, S. J. H. (2020). Predicting students' academic performance by using educational big data and learning analytics: evaluation of classification methods and learning logs. *Interactive Learning Environments*, 28(2), 206–230. doi:10.1080/10494820.2019.1636086

[10] Chaoqun, W. (2022). Implementation of Asynchronous Interactive Learning activities in a blended teaching environment and the evaluation of its effectiveness. *International Journal of Emerging Technologies in Learning (IJET),* 17(15), 93–107. doi:10.3991/ijet.v17i15.33755

[11] Kutbiddinova, R. A., Eromasova, A., & Romanova, M. A. (2016). The Use of Interactive Methods in the Educational Process of the Higher Education Institution. *International Journal of Environmental and Science Education*, 11(14), 6557–6572.

[12] Sava, R. (2016). Using interactive methods in teaching accounting. *Studies in Business and Economics*, 11(2), 130–139. doi:10.1515/sbe-2016-0027

[13] Semenova, N., Lebedeva, N., & Polezhaeva, Z. (2020). Modern cloud services: Key trends, models and tools for interactive education. In *Integrating Engineering Education and Humanities for Global Intercultural Perspectives* (pp. 883–890). Cham: Springer International Publishing.

[14] Struijs, S. (2020). The mental wellbeing of students during the COVID-19 pandemic. *Preliminary data from the Caring Universities consortium.* E-source: report_the_mental_wellbeing_of_students_during_the_ covid-19_pandemic.pdf (accessed August 9, 2022).

[15] Yee, K. (2020). Interactive Techniques. University of South Florida. E-source: https://www.usf.edu/atle/ documents/handout-interactivetechniques.pdf/ (accessed August 9, 2022).