

# Exploring the influence of interactive education on academic progress: Evaluating effectiveness and implementation approaches



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**Abstract** Preparing students for professional activity, self-fulfillment in life and confident career advancement poses a challenge for the teacher of a higher educational institution (HEI). Interactive teaching strategies and involving students in every aspect of the curriculum are crucial in resolving this issue. The purpose of the research is to characterize the role and influence of interactive learning on students' academic achievements. The research methods: theoretical (analysis, synthesis, generalization), empirical (experiment, observation, description), generalization. The research is based on the characterization of interactive methods and forms of work, their implementation in the educational process, use in online learning, role and impact on students' performance and academic achievements. Some issues of applying interactive learning have been verified through a short-term experiment. It has been revealed that the issue of the influence of interactive learning on students' academic achievements was studied insufficiently in pedagogical circles and requires more thorough scientific studies. The research results confirm that using interactive learning methods and techniques greatly facilitates the creation of communicative relationships in the group and with the teacher. They help maintain a positive atmosphere, and in combination with a high level of professional motivation to learn, contribute to the professional growth of students, the effective accumulation and use of knowledge and skills. The academic paper proves that interactive forms of cooperation with students play a significant role in the success of the latter, influencing the effectiveness of achieving educational goals. The application of interactivity is not possible without considering particular rules: establishing the relevance and feasibility of using interactive techniques in a particular target audience (professional orientation, age characteristics of students), readiness to use these techniques, high level of motivation to work with interactive techniques, etc. Interpretation of the results of the conducted observational experiment-study shows the effectiveness of the application of interactive learning methods in practice.

**Keywords:** forms of activity, interaction, innovative technologies, online communication, educational process

## 1. Introduction

Directing the process of professional development of a future specialist requires specific prerequisites. One of the prerequisites may be the use of interactive learning methods and techniques by an HEI teacher. According to the standpoint of Pishko O. (2018), the essence of such learning is that everyone, both the teacher and the students, constantly and actively interact. Therefore, the purpose of interactive learning is to effectively accomplish a common task: to actively involve students in important group work, in which everyone feels their own importance, influence, creativity and will. This definitely has a positive effect on personality development, fosters respect for partners and promotes the conscious acquisition of educational information.

Everyone participates equally in the replicable activity and is accountable for their own work when interactive learning methods and strategies are used. Although the student and the teacher play equal roles, the latter assumes the duties of a facilitator, a tutor, that is, a guide and an organizer in this form of the educational process. Consequently, the teacher should be ready and positively motivated to use interactive forms of work with students, implement them purposefully and relevantly, and understand their effectiveness.



The issue of interactive learning technologies in pedagogical thought has been examined in the scientific works of many scholars. For instance, there are comprehensive studies by Ukrainian researchers Bekh, Velyka, Dyka, Zhukov, Ziazun, Kademiia, Kaplinskyi, Kozak, Sysoieva, Skorokhodov, Stoliarenko, Pometun, etc., that confirm the optimal effectiveness of introducing interactive forms of work for student learning.

The influence of interactive forms of work on students' academic achievements was studied by Volkova, Hurevych, Mezhuieva, Khamska, Khomiak, et al.

"Real learning with real opportunities for every student" is the motto of the JASON Learning (2023) learning system in the United States, which serves as a fascinating example. It suggests to using situations, events, and samples that are real in the future professional world during interactive learning. At the same time, they highlight success stories, role models, videos, and hybrid curricula that inspire students to follow their chosen path.

The System 2020 project, which has received approval and funding from the European Union's Horizon 2020 Research and Innovation Program and is coordinated by the Science Gallery Dublin, also promotes an interactive learning model for adolescents and young people under 20 years of age. This model implies conducting in-depth scientific studies by pupils and students from different families, parts of the world and nationalities, working remotely but collaboratively and collectively. Undoubtedly, this approach to learning enables students to develop and assert themselves, eliminate negative traits (timidity, uncertainty, fear of the audience, shyness), and increase their self-esteem (Kliuchnyk et al., 2021; Dudnik et al., 2020).

We can observe that modernity dictates new requirements for young people, in which competitiveness in the labor market, readiness for constant change and risks, lifelong learning and development, special communication and diplomatic skills, emotional intelligence, and mobility are crucial. Thus, the school is also changing in Ukraine, transforming into the New Ukrainian School, the structure, formula and principles of which provide education for the mentioned qualities, NUS (2017). It is the outcome of implementing interactive work formats that allow young people to develop new ways of thinking and building better value systems. However, interactive learning is also important for students' academic performance. Therefore, the purpose of this research is to characterize the role and impact of interactive learning on students' academic achievements (Popov et al., 2022).

The research goals:

- to analyze the role of interactive learning in students' achievements through the prism of pedagogical thought in Ukraine and abroad;
- To study the effectiveness of using interactive forms of work for students' performance and academic achievements through pedagogical experimental research;
- to summarize the role and impact of interactive learning on students' academic achievements.

The modern educational process is full of innovative and interactive forms of work. It is frequently a requirement of the times, and it is often caused by global epidemics, such as COVID-19, as well as the military aggression that Ukraine has faced. In particular, distance learning and online communication have become the most relevant. This is also widely discussed by foreign researchers; in particular, Waniek (2017) deeply substantiates the need for distance work, as well as online communication, which is indispensable in establishing interconnections between teachers and students and using active learning as opposed to passive learning. According to scientists, active learning can help improve students' performance, but it should be used carefully so as not to demotivate students.

The introduction of interactive technologies in the online learning process will increase efficiency. The opinions of Ukrainian (Ilinitska, 2023), Cameroonian (Alemnge, 2018) and Chinese (Fan, 2022) teachers agree on this issue. At the same time, the communication processes that take place between students and teachers in online communication also have a positive impact on the education and academic achievements of students.

Representatives of the US pedagogical thought Dean (2016) are convinced that it is currently necessary to teach students in such a way that they will not have problems with employment in the future. That is, the educational process should be permeated with group work, discussions, problem-solving, training, business games, role reversals, etc.

The effectiveness of so-called collaborative learning is confirmed by the works of Italian scientists Rocca (2014), and his pedagogical experiment proves the genuine connection between interactive methods of work and academic success.

Kademiya (2013) describes in detail the innovative technologies of interactive learning. Particular attention is given to case-study technology since its use involves students analyzing the situation, delving into the essence of the problem, and selecting possible solutions to it. Such cases are based on using true professional material that is close to the situations that students will encounter in the future. Considering that the methodology is based on real-life examples, it requires searching for effective targeted solutions to the situation, promoting analysis of the material, and increasing the level of knowledge, according to the study of Kademiya.

Lyashenko (2013) argued that interactive learning is a source of professional motivation that begins to be formed in students during the 3rd year of study, precisely during active immersion in the formation of practical interest and skills for future professional activities. We agree that this period of study is the most favorable for introducing interactive methods and techniques into the learning process. Students are aware of whether they possess a sufficient level of knowledge and

achievements and what professional skills they need to improve and understand the possibilities of fulfilling their own potential.

Topolya (2005) provides an intriguing perspective on interactive learning. The researcher analyzed lectures, which are the most common method for accessing teaching materials in higher educational institutions. However, he noted that even during a lecture, it is possible to activate students, promote better knowledge acquisition, increase the level of professional formation, and develop professional motivation, provided that such a method of knowledge transfer has elements of heuristic conversation, sometimes even a lively discussion, in which future specialists will actively seek possible solutions to the proposed task. These elements of interactivity are very easy and accurate to apply in practice and improve students' knowledge.

Positive learning experiences are crucial for students' academic performance and accomplishments, according to Kozmenko (2018), who bases this assertion on experimental research of American teachers. Moreover, the main task of higher educational institutions is to create the prerequisites for such students' academic success. First and foremost, it depends on the personality of the teacher, who should possess a sufficient arsenal of forms and methods of cooperation with students to motivate them, set an example, convey educational material and stimulate the development and implementation of practical skills. We return again to interactive learning because the use of its methods and techniques makes it possible for teachers to provide valuable support for the transfer of knowledge and experience.

The role of the teacher's personality as crucial in the integration of interactive technologies into the educational process is considered by Hulivata (2019). The researchers believe that when collaborating through interactivity, the teacher performs a consultative role. This, in turn, requires the development of certain educational and methodological tools that stimulate students' activity, independence, and interest in the subject.

Bulgakova (2023) used gamified learning as a method of interactive collaboration with students. An experiment conducted by the researchers confirmed the effectiveness of this form of interactive learning, including in terms of academic performance. According to the observations of scientists, game-based collaboration arouses students' interest, unites them around the learning process, increases motivation to learn, leads to a better understanding of the educational material, and, what is important for today, the gamified game format can be easily adapted to distance learning.

As noted by Kozir (2021), the introduction of interactive collaboration technologies in the educational process transforms the attitude to the object of learning, creating a subject from it. Thus, each student will have the opportunity to become a coauthor of the lesson, not just to acquire a high level of knowledge or develop cognitive activity.

Thus, scientists are convinced that the application of interactive learning is relevant and effective, provided that the teacher is aware of its essence and specifics of use and takes into account the characteristics of the student group.

## 2. Materials and Methods

The following methods were used in the course of the research:

- theoretical (analysis, synthesis, generalization) – work with scientific, popular science literature, the internet;
- empirical (experiment, observation, description) – work on a pedagogical experiment;
- generalization – comparison of the implementation of interactive forms of work with students in Ukraine and abroad.

## 3. Results

To analyze the role and impact of interactive learning on students' academic abilities, we conducted a short-term observational pedagogical experimental study. Thirty third-year students at Vinnytsia State Pedagogical University participated in the experiment.

At the first stage of the experiment, all students were assigned the task of investigating the psychological features and problems of adolescence. Everyone worked on this task independently and individually. The results of the students' studies were presented orally during class. The students had no difficulty completing this task. In their oral presentations, the participants outlined the main features of adolescents and the challenges they face (lack of understanding of others and parents, low self-esteem, lack of confidence in their own abilities).

After reviewing the students' reports, we moved on to the second stage of the experiment, which was conducted directly during the class. We kept the same topic for the study that the students had already been working on independently; however, we split them into groups (10 people each) and analyzed the problems of adolescents in more detail. The participants were limited to 10 minutes.

The interpretation of the results confirmed that group communication opened up new opportunities for students. They started recollecting how their bodies were changing, and it turned out that most of them were ashamed of themselves, and some of them had difficulties because of puberty; they had questions of an intimate nature and were afraid to talk to their parents about such topics. Other students mentioned that they wanted to self-assert themselves, including through bad habits, the desire to be friends with "bad company", and running away from home to attract attention. Unfortunately, the students also noted cases in which teenagers were seriously concerned about suicide.

In addition to a detailed study of the issues of adolescents and the features of this stage of growth, one of the groups proposed a memo, "Advice to parents of adolescents".

Thus, it can be confidently stated that working in groups on a fairly simple task has become an impetus for active interaction, self-exploration, lively discussion and debate, empathy and compassion, support and diplomacy in discussing acute issues. Therefore, the information studied by students through this form of activity will become qualitatively assimilated, understandable, and reflectively experienced, and it will not cause difficulties in further processing of related topics.

#### 4. Discussion

According to the conducted experiment and the study of the functioning of interactive teaching methods in the pedagogical and scientific literature of Ukraine and abroad, their application can be effective for teaching in higher educational institutions and improving the level of academic achievement of students in particular. However, as a number of modern scientists are convinced (Tsyrukun, 2011; Antiushko, 2022; Hulivata, 2019), the interactive should be implemented under certain conditions:

1. Interactive teaching methods should be implemented in accordance with the professional activities of future students. For instance, the following methods will be relevant for future teachers: discussion, coaching (several coaching techniques: "time line", "circle of achievements", "wheel of life balance", analysis of psychological and pedagogical characteristics, journal of achievements, etc.), success situation, and business games. These methods make it possible to improve the microclimate of the team and optimize the learning environment for the acquisition of knowledge and skills. It should be emphasized that the mentioned methods are also significant for the positive motivation of students at pedagogical universities because of their desire for self-improvement and increased self-esteem (Elbrekht et al., 2022).

2. The motivation of all participants was to implement interactive forms of work in the educational process. If the teacher understands that working with such forms of work is expedient, comfortable, and interesting but does not have sufficient motivation to implement them, she regrets personal time to prepare certain tasks, and considers it appropriate to use outdated and proven forms of work with students, then this will not lead to the expected outcome. Students' lack of desire to be involved in interactive forms of work will also have negative consequences.

3. Using interactive learning methods with students who are interested in their age group and professional direction. The teacher should understand that it is interesting for senior students to be involved in situations of success, professionally oriented situations in which they can change roles, test their own knowledge and professional capabilities and skills, discussions where students can make quick decisions, logically, from a professional point of view, prove their opinion, and argue diplomatically.

One must agree that interactive learning is indispensable for modern higher education since it is an opportunity for both students and teachers to be in a positive microclimate, to reflect, to actively interact and understand each other correctly, and to establish mutually valuable partnerships for the effective process of acquiring professional knowledge and skills.

Tsyrukun (2011), Antiushko (2022), and Ilinitcka (2023) see the preparation of students for professional activity, self-realization in life and confident career growth as a certain challenge for teachers at higher educational institutions. Some scholars (Kholod, 2023; Kozyr, 2021) believe that interactive teaching strategies and student involvement in every aspect of the curriculum are crucial in solving this issue. These conclusions confirm the results of the present study.

As noted by Kornyska (2018) and Pyshko (2014), it is impossible to underestimate the significance of the impact of interactive learning on the academic achievements of students and the level of their knowledge and skills. Some researchers (Binytska, 2015; Fan, 2022) also note its effectiveness, particularly due to the possibility of systematic cooperation among students, constant dialog, and joint educational and practical activities. The cited results of the scientific research justify the conclusions obtained in the current study.

A number of scientists (Bashkir, 2019; Hulivata, 2019; Sytnik, 2021) have characterized interactive methods and forms of work, their implementation in the educational process, their use in online learning, and their role and impact on the work capacity and educational achievements of students. Separate issues related to the application of interactive learning were analyzed by Alemnge (2018) and Kozmenko (2018). At the same time, the researchers found that the use of interactive learning methods and techniques significantly facilitates the creation of communicative relationships in the group and with the teacher, maintains a positive atmosphere, and, in combination with a high level of professional motivation for learning, contributes to the effective accumulation and use of knowledge and skills. The concept proposed by scientists explains the results of this study.

The scientific community has proven that interactive forms of cooperation with students play a significant role in the success of the latter, influencing the effectiveness of achieving educational goals. However, scientists (Bulhakova, 2023; Waniek, 2017) note that the use of interactivity is impossible without taking into account certain requirements, in particular, identifying the relevance and expediency of using interactive methods in a specific target audience and a high level of motivation for innovation.

## 5. Conclusion

According to NUS (2017), the success of one's personality lies not only in one's possession of knowledge and skills but also in one's ability to use one's knowledge, implement it, adapt it to one's professional environment and life situation, learn quickly, find mobile solutions to tasks and problems and critical situations, and be able to take responsible risks. Students can develop and deepen all of these traits through the introduction of interactive collaboration methods by teachers in the learning process.

According to scientific studies, including those of foreign researchers and educators, students' academic performance and academic abilities largely depend on the saturation of the educational process with interactive methods and methods of cooperation. However, as noted above, HEI teachers should use such forms of work expediently and skillfully; they should possess a high level of motivation for this process and observe the readiness of students for such activities.

The level of academic ability also depends on the following:

- Developed study habits (responsibility, perseverance, mobility, hard work, etc.);
- comfortable environment (academic and home); ability to organize time (for study/leisure/work);
- Teaching methods;
- students' motivation and teachers' motivation;
- positive learning experience.

This list can be supplemented; however, we hope that systemic transformations in modern Ukrainian schools contribute to the fact that future students will be ready and motivated to study at a university and will gain a holistic view of their future professional direction and positive learning habits.

The advantages of introducing interactive learning into the educational process are as follows:

1. Establishing a positive microclimate in a group of students;
2. Facilitating friendly and cooperative relationships between teachers and students;
3. Creating prerequisites that make the process of learning easier.
4. Creating conditions for students to develop an interest in practical activities related to their future profession.
5. Interest and desire to be an active participant in the educational process.
6. Cultivating positive learning and personal habits.
7. The ability to critically observe and objectively analyze various professional situations.
8. Development of personal potential, the desire for self-affirmation, self-development, and in the future – professional improvement.
9. The ability of the teacher to systematically monitor the level of students' capabilities and achievements is facilitated.
10. Increasing motivation to learn and the level of students' academic achievements.

The issue of the interrelation of the role and influence of interactive learning on students' academic achievements in domestic and foreign scientific thinking has not been studied sufficiently and requires more detailed and thorough studies.

### Ethical considerations

Not applicable.

### Conflict of interest

The authors declare no conflicts of interest.

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