

S. I. BUKHKALO, A. O. AGEICHEVA, I. V. ROZHENKO, S. O. SHKIL

INNOVATIVE LEARNING METHODS DURING SEMINAR CLASSES AT HIGHER EDUCATIONAL INSTITUTIONS

The importance of teaching students a foreign language by innovating study methods is investigated. It is being set that it is necessary to strengthen the communicative component when teaching a foreign language as a foreign language. The usage of cases in classes are investigated. It is studied that classic case promotes the development of independent decision-making skills, the second purpose of working with the case in the classroom is a communicative practice. It is described possible cases and presents the development of the proposed concept in the article. Case study technology for the formation of critical thinking skills is described in the article. It was determined that the systematic use of the case study method in the study of the English language makes it possible to effectively form critical thinking skills. The use of various methods and techniques of active learning arouses students' interest in the educational and cognitive activity itself, which enables creating an atmosphere of motivated, creative learning and at the same time solving a whole range of educational, educational, developmental tasks.

Key words: case studies, foreign language, communication, innovative teaching methods.

Introduction. Higher education in Ukraine plays a priority role. The development of higher education should be aimed at improving the quality of specialist training, giving everyone the opportunity to choose a future specialty independently. To solve this problem, it is necessary to introduce innovative teaching methods. Innovative methods are designed to activate the learning process of students. Innovative teaching methods occupy the main place in the modern period. In any case, the method is a way of organizing the joint activities of a teacher and a student aimed at optimal use of the opportunities available to each of the parties to achieve educational goals.

With the development of computer technologies, innovations have spread widely into social life: science, education, culture, politics. Introduction of innovative technologies into the educational process. Effective for the modernization of higher education is the introduction of innovative teaching methods into the educational process. The problems of innovative technologies and methods in modern higher education are urgent, because the tendency to humanize the content of technical education has intensified, and as a result, there is a need for scientific and pedagogical staff who would be able to provide an innovative approach to the implementation of these trends in the educational process.

Identification of previously unsolved parts of the overall problem. It is significant that teachers had the opportunity to create and implement their own innovative methods. All these changes intensified the need to update and improve the educational environment of the university. Undoubtedly, the system of higher education is important, the main goal of which is the formation of a competitive, highly qualified specialist with competencies that meet modern requirements.

The use of the case method in teaching students can contribute to the formation of positive motivation for learning, increasing cognitive activity, active involvement of students in the educational process, stimulation of independent activity, development of creative abilities and non-standard thinking. The problems of the case study method were dealt with by such researchers as S. Gass, L. Selinker, A. L. George, E.

Bennett, M. and other scientists who have made great contribution in this field. However, the problem of effective use of cases in the university education continues to remain open. D. Halpern and others considered critical thinking in their works. In this regard, our research is aimed at developing a set of exercises based on the case study method that form critical thinking skills. Thus, the relevance of this study is determined by the need to develop effective foreign language exercises for the formation of critical thinking skills in students of a classical university. The effectiveness of teaching students critical thinking depends on the choice of means supporting their interest in the activity being performed. Also, the relevance of the research is related to insufficient knowledge of the problem of choosing the most effective methods of teaching a foreign language using a case study at the level of higher education. The following methods of theoretical research were used in the work: analysis of methodical and psychological-pedagogical literature regarding the description of the specifics of the case methodology and psychological characteristics of students, generalization of information about the principles and regularities of critical thinking. The following methods of practical research were used: an experiment, with the help of which case-based exercises were implemented, a check of the level of formation of critical thinking skills, as well as methods of statistical data processing (graphic presentation of research results).

The main goals of this article are:

The use of innovative methods of forming critical thinking skills during professional training

- 1) analyze the definitions and main characteristics of the case study method;
- 2) describe the main advantages of the case method as an active method of learning a foreign language;
- 3) describe the principles and regularities of critical thinking;
- 4) analyze the main psychological and pedagogical characteristics of students learning abilities;
- 5) describe the main principles of the technology of using the case-study method in teaching;

© Bukhkalov S.I., Ageicheva A.O., Rozhenko L.V., Shkil S.O., 2023

The main part. Pedagogical science analyzes innovative teaching methods aimed at effective assimilation of knowledge by students, development of their intelligence, acquisition of skills and abilities, experience of self-education, scientific work, acquisition of qualities that contribute to creative self-realization. The teacher is the driver of innovative activity. A creative teacher experiments to create an effective teaching method, adjusts it, improves it, and offers new methods. The main condition for such activity is the innovative potential of the teacher. For example, non-standard classes that interest all students and contribute to intellectual development are of great importance for the training of future specialists.

Non-standard classes stimulate the student's cognitive independence, creative activity and initiative. Therefore, the use of innovative methods in the educational process of higher education institutions creates conditions for the effective self-realization of the

personality of the future technical specialist. To a large extent, it depends on the pedagogical skill of the teacher of the technical university, on the manifestation of his tolerance in the educational process. The case-stage method (from the English "case" — case, situation) is an active learning method based on a group analysis of a situation (case) and a proposal for its solution in specific conditions. The English term "case study" does not have an exact translation into Russian. Russian-language analogues are mainly used: case study, case method, case method, learning by practical examples, case method, situational training. The case method has the following didactic properties. As material, students are offered a case (situation) with an unsolved problem. The case has a clear structure, which consists of a problem situation, questions and tasks for discussion, as well as appendices with additional information (Table 1, Figs. 1, 2). Several students can participate in the discussion of the situation at the same time [1].

Table 1. The most common models components of problem situations according to examples and learning tasks

№	Innovation examples and tasks component models characteristics
1	Scientific justification and definition, as a rule, of the spatial and temporal features in which the selected experimental model worked, the main components that are considered essential for the general functioning
2	Determination of the main components, which are considered essential for the general functioning of the modern technological system of education based on examples and tasks of experimental models of the industry.
3	Determination of auxiliary components, which are considered essential for the general functioning of the technological system of learning based on examples and tasks of experimental models of the industry.
4	Determination of the scientific substantiation of the problem in extraordinary (critical or borderline) conditions and situations and establishing its limits based on examples and tasks of experimental models of the industry.
5	Methodology and analysis of opportunities in emergency (critical or borderline) conditions and situations - familiarization with theoretical information and experimental problems of innovative technology.
6	Methodology and analysis of possibilities in extraordinary (critical or borderline) conditions and situations - familiarization with experimental characteristics, properties for the purpose of definition and analysis of mathematical models
7	Determining the scientific basis of the problem and establishing its limits according to the algorithms of a specific example, task or study.
8	Methodology and analysis of possibilities available for testing hypotheses or a series of hypotheses of scientific research or task performance.
9	Analysis of the obtained possibilities of calculations in emergency conditions and survival situations and drawing conclusions based on the obtained results.
10	Determination of conclusions and prospects for the further development of various branches based on the analysis of the obtained research opportunities and calculations in emergency conditions and survival situations based on the obtained results.

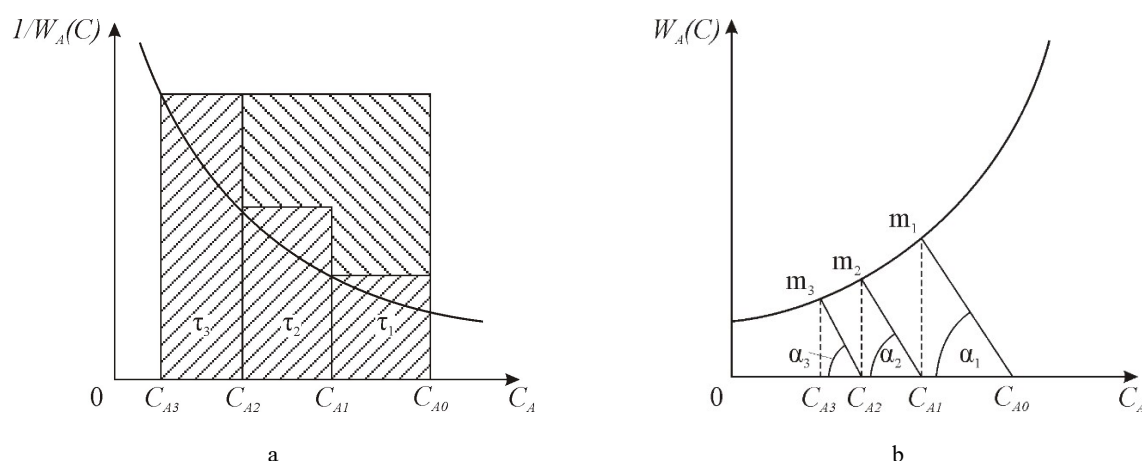


Fig. 1. Presence of reagents (a) and the number of reactors graphical methods duration calculating (b) in the cascade

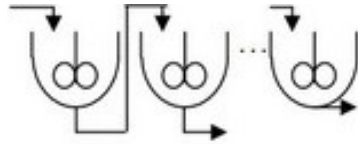


Fig. 2. Ideal mixing reactors in the cascade scheme

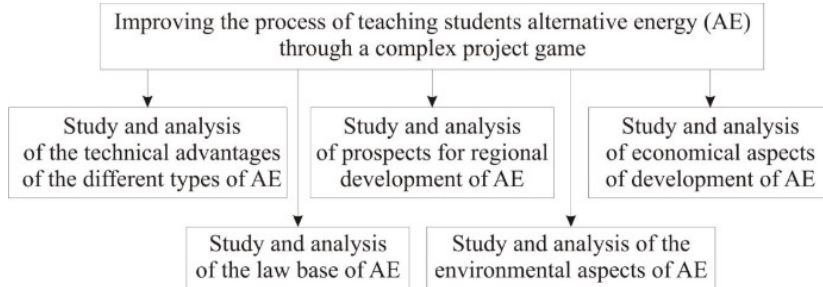


Fig. 3. Students' education peculiarities determination according to alternative energy AE characteristics

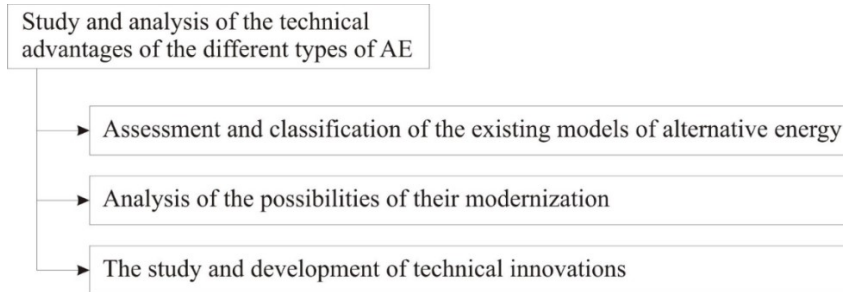


Fig. 4. Training students algorithm according to alternative energy AE characteristics

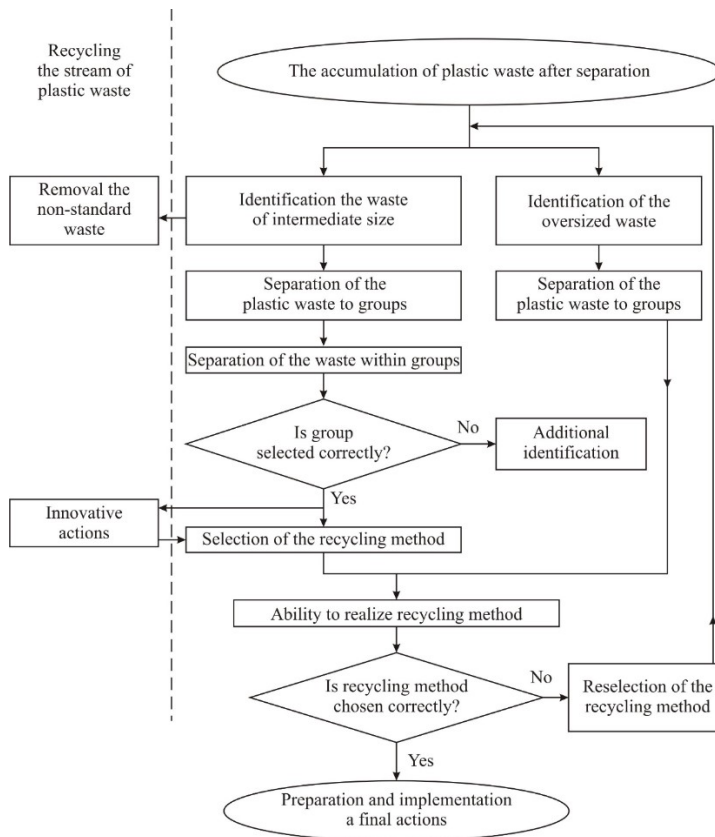


Fig. 5. Algorithm for determining students' learning peculiarities by characteristics

The case study method is a method of active analysis of a problem situation, based on training by solving specific situational tasks. The essence of the case study method: students, divided into groups, must analyze the situation and develop a practical solution; the completion of the process is the evaluation of the proposed algorithms (Fig. 3 – Fig. 5) and their discussion within the framework of a general discussion in the context of the given problem

For the first time, the case method was applied in the educational process in 1870 at Harvard Law School by the Dean of the Faculty of Law, Professor of Law Christopher Columbus Langdell. "Using the Socratic method (question-answer), developing the method of trial and error, he offered students to work with primary sources. Instead of traditional lectures, students considered and discussed real life situations. Cases are offered in the classical sense, where the case represents a real-life problem situation that students must solve based on existing knowledge, practical experience, and intuition. Since any situation has several solutions, there is a discussion of all possible solutions [2]. When studying a foreign case, it can be used quite widely. When solving a problematic case task, the ability to listen, take into account an alternative point of view, and express one's own developing orientation and adaptation in a new language environment, being alone in real situations. Using this method students who quickly adapt have the opportunity to be ready to work in a team, to find the most rational solution. Analytical and communicative abilities are formed and developed, research activities are conducted. Naturally, situational analysis will be used both for professional training and for everyday society. Cases can be offered in various forms. The main thing is that the information presented in the case has a clear and accessible structure with acceptable and understandable definitions and accurate data. An individual approach in choosing a topic and what is relevant for this group of students is important. You should pay attention to the features of this team. Information is selected that is relevant and acceptable for a given, specific group of students, taking into account national traditions and peculiarities of mentality. Unlike traditional teaching methods, when student participation in the learning process is limited, the case method is an active learning method and requires the student's active participation in the lesson [3]. Some teachers avoid using the case study method because there is a change of roles: the teacher does not have a dominant role, but becomes the coordinator of the lesson.

It is very important that the case is well prepared. In advance, so that each student knows what his role is. It is not enough to simply give a student a practical example and expect them to understand how to use. This mistake is often missed by teachers who are not familiar with the case method. This method requires intensive preparation of students before the start of each lesson. The practical part of training consists in the fact that the developed set of exercises based on the case study method can be used in the educational process at universities. The

preparatory stage is familiarization and demonstration. It contains the teacher's instructions and recommendations for analyzing the case. [3, 4].

The second stage is the most extensive, it involves a direct analysis of the case, during which students look for a way out of specific situations [5].

First, there is individual training of students, then a small discussion in mini-groups of the results of individual research activities. This is followed by a discussion with the whole group or class. The final step is students' reflection, their self-evaluation of their activities. And, finally, the teacher evaluates the performance of students.

The teacher and the student have the same information, but their roles are different. It is very important that the case is well prepared in advance so that each student knows what his role is. It is not enough to simply give a student a practical example and expect them to understand how to use it. This mistake is often missed by teachers who are not familiar with the case method. This method requires intensive preparation of students before each lesson.

When choosing a case, the teacher must define clear learning goals. It is necessary to be well aware of the age and individual characteristics of students, and it is also necessary to understand how the concepts of the case fit into the general course of study. The teacher should be guided by the following algorithm of actions.

1. The teacher should read the case carefully with his students or ask his students to provide background information in a visual form.

2. Students should be given some information about how they should analyze the case (read the case several times, identify the main problems, set goals, identify solutions, choose the best solution, understand how it should be implemented, make an action plan to implement the chosen solution).

3. Before proceeding to the analysis of the case, it is necessary to first eliminate grammatical and lexical difficulties so that students feel confident in the discussion.

The teacher should create a favorable friendly atmosphere for discussion, and the students should have a certain level of trust in each other. Teachers must ask thoughtful questions. The first question asked by the teacher is decisive. The main task is to encourage students to think thoughtfully. Don't start with too easy or trick questions.

The developed case will be effective only under the condition of genre, methodological and scientific research. The case method can be used not only in regular lessons to consolidate the material, but also when testing knowledge. For example, a case can be distributed to students before an exam or assessment. In this case, students will present the case solution as a performance report. The case can also be used in the exam itself, then the student will receive the case in the ticket and must pass the analysis of this situation. The advantage of the method is complete immersion in the situation and one's roles. During the lesson, students do

not sit in a row, the desks are rearranged in such a way as to represent a U-shaped seating arrangement of students. The open part should face the board. This arrangement allows all students to see each other and the teacher. Interactions between students, as well as between students and the teacher, are constructive and positive. Such interaction contributes to the improvement of analytical, communicative and interpersonal skills of students, as mentioned above, which is undoubtedly a plus. The teacher asks the class random questions about the case or about an individual student's point of view. If a student develops a new understanding of a problem, they are usually encouraged to share it with the class.

The degree of participation in the discussion is not the only criterion in the evaluation - the quality of participation is also an important criterion. The assessment takes into account the quality, degree of participation and contribution to the work in groups, types of problems identified, questions asked, solutions proposed, presentations made, written examples (logical sequence and structuring of content, language and presentation, quality analysis and recommendations). If a written case analysis is required, the student must ensure that the analysis is properly structured. The instructor can provide specific guidance on the structure of the analysis. However, when submitting an analysis, the student must ensure that it is accurate and free of factual, linguistic, and grammatical errors. In fact, this is a requirement for any paper a student submits. As already mentioned, with the help of this method, students have the opportunity to demonstrate and improve analytical and evaluation skills, learn to work in a team to find the most effective solution to a problem. The teacher should lead the discussion of the case. Students are expected to participate in the discussion and express their views. During the discussion, while the student is expressing his point of view, others can ask him questions or challenge his point of view. Another advantage of the method is complete immersion in the situation and one's roles. During the lesson, students do not sit in a row, the desks are rearranged in such a way as to represent a U-shaped seating arrangement of students. The open part should face the board. This arrangement allows all students to see each other and the teacher. Interactions between students, as well as between students and the teacher, are constructive and positive. Such interaction contributes to the improvement of analytical, communicative and interpersonal skills of students, as mentioned above, which is undoubtedly a plus. The teacher asks the class random questions about the case or about an individual student's point of view. If a student develops a new understanding of a problem, they are usually encouraged to share it with the class. The degree of participation in the discussion is not the only evaluation criterion - the quality of participation is also an important criterion. The assessment takes into account the quality, degree of participation and contribution to the work in groups, types of problems identified, questions asked, solutions proposed, presentations made, written examples (logical sequence and structuring of content, language and

presentation, quality analysis and recommendations). If a written case analysis is required, the student must ensure that the analysis is properly structured. The instructor can provide specific guidance on the structure of the analysis. However, when submitting an analysis, the student must ensure that it is accurate and free of factual, linguistic, and grammatical errors. In fact, this is a requirement for any paper a student submits. As already mentioned, with the help of this method, students have the opportunity to demonstrate and improve analytical and evaluation skills, learn to work in a team to find the most effective solution to a problem. However, the introduction of innovative teaching methods in higher education includes many elements. At the same time, the forms of using information technologies for each element of the educational process will have their own characteristics. An essential feature of innovative teaching methods is the possibility, in addition to classroom classes, with appropriate support, to acquire basic knowledge through independent work of students with educational material. In this case, in addition to traditional educational materials (textbooks, study guides, etc.), an electronic form of educational information content can be used. The main advantages of the electronic form of the content of educational information for independent work of students are compactness, great expressive possibilities of educational material, interactivity. All this contributes to the creation and active use of educational multimedia technologies and educational resources on the Internet. The quality and degree of assimilation of educational material are growing significantly. In addition to creating a rich educational environment, the teacher, having the opportunity to draw conclusions and ideas for further research

Thus, summing up, it can be noted that innovative methods of teaching students are based on active methods that contribute to the formation of a creative, innovative approach to understanding professional activity, the development of independent thinking, the ability to make optimal decisions in a specific situation.

The use of innovative methods in professionally oriented training is a necessary condition for the training of highly qualified specialists.

The use of various methods and techniques of active learning arouses students' interest in the educational and cognitive activity itself, which makes it possible to create an atmosphere of motivated, creative learning and at the same time to solve a whole set of educational, educational, developmental tasks. Reducing the time for information reproduction, it can be spent much more time to explain the material [20, 21].

Conclusions and ideas for further investigation.

Thus, summing up, it can be noted that innovative methods of teaching students are based on active methods that help form a creative, innovative approach to understanding professional activity, develop independent thinking, the ability to make optimal decisions in a particular situation. As practice shows, the use of innovative methods in professionally oriented education is a necessary condition for highly qualified specialists training. The use of various methods and techniques of active learning arouses students' interest in the educational

and cognitive activity itself, which enables creating an atmosphere of motivated, creative learning and at the same time

solving a whole range of educational, educational, developmental tasks.

Список літератури

- Binytska, K., Buchkivska, G., & Kokieli, A. (2020). Requirements for system of professional competencies of English teacher in EU countries. *Continuing Professional Education Theory and Practice (Series: Pedagogical Sciences)*, 2 (63), 85-90. DOI: 10.28925/1609-8595.2020.2.122.
- Loewen, S., Li, S., Fei, F., Thompson, A., Nakatsukasa, K., Seongmee, A., & Xiaoqing, C. (2009). Second language learners beliefs about grammar instruction and error correction. *The Modern Language Journal*, 93(1), 91-104.
- TESOL International Association. Standards for the Recognition of Initial TESOL Program in P-12 ESL Teacher Education.
- British Council. Vocabulary. Level Advanced. – URL: <https://learnenglish.britishcouncil.org/vocabulary>
- English Language Teaching; Vol. 14, No. 11; 2021 ISSN 1916-4742 E-ISSN 1916-4750 Published by Canadian Center of Science and Education
- Fei, X., & Derakhshan, A. (2021). A conceptual review of positive teacher interpersonal communication behaviors in the instructional context. *Frontiers in psychology*, 12, 2623. <https://doi.org/10.3389/fpsyg.2021.708490>
- Бухкало С.І. Деякі концепції сталого розвитку України Інформаційні технології: наука, техніка, технологія, освіта, здоров'я: тези доповідей XXVIII міжнародної науково-практичної конференції MicroCAD-2020, 28-30 жовтня 2020 р.: Ч. II./за ред. проф. Сокола Є.І. – Харків: НТУ «ХП», с. 172.
- Бухкало С.І. Основні властивості плівкового полімерного покриття геліоколекторів. Інформаційні технології: наука, техніка, технологія, освіта, здоров'я: тези доповідей XXVIII міжнародної науково-практичної конференції MicroCAD-2020, 28-30 жовтня 2020 р.: Ч. II./за ред. проф. Сокола Є.І. – Харків: НТУ «ХП», с. 173.
- Бухкало С.І. Синергетичні моделі утилізації-модифікації полімерної частки ТПВ. Вісник НТУ «ХП». – Х.: НТУ «ХП», 2017. – № 41 (1263), С. 17–27.
- Bukhhalo S.I J.J. Klemeš, L.L. Tovazhnyanskyu, O.P. Arsenyeva, P.O. Kapustenko, O.Yu. Perevertaylenko. Eco-friendly synergetic processes of municipal solid waste polymer utilization. *CHEMICAL ENGINEERING TRANSACTIONS. VOL. 70*, 2018, pp. 2047–2052
- Говоров П.П., Бухкало С.І., Кіндінова А.К., Говорова К.В. Загальні закономірності системи бактерицидних установок знезараження води. Інформаційні технології: наука, техніка, технологія, освіта, здоров'я: тези доповідей XXVIII міжнародної науково-практичної конференції MicroCAD-2020, 28-30 жовтня 2020 р.: Ч. II./за ред. проф. Сокола Є.І. – Х.: НТУ «ХП», с. 181.
- Калініченко Д.В., Бухкало С.І., Мірошніченко Н.М. та ін. Описовий алгоритм процесів кристалізації цукру. Інформаційні технології: наука, техніка, технологія, освіта, здоров'я: тези доповідей XXVIII міжнародної науково-практичної конференції MicroCAD-2020, 28-30 жовтня 2020 р.: Ч. II./за ред. проф. Сокола Є.І. – Харків: НТУ «ХП», с. 207.
- Мальцева А.О., Бухкало С.І., Іглін С.П., та ін. Загальні умови процесів кристалізації цукру. Інформаційні технології: наука, техніка, технологія, освіта, здоров'я: тези доповідей XXVIII міжнародної науково-практичної конференції MicroCAD-2020, 28-30 жовтня 2020 р.: Ч. II./за ред. проф. Сокола Є.І. – Х.: НТУ «ХП», с. 233.
- Ольховська В.О., Кравченко О.С., Бухкало С.І. Складові алгоритму пошуку раціональних закономірностей роботи обладнання. Інформаційні технології: наука, техніка, технологія, освіта, здоров'я: тези доповідей XXVIII міжнародної науково-практичної конференції MicroCAD-2020, 28-30 жовтня 2020 р.: Ч. II./за ред. Сокола Є.І. – Х.: НТУ «ХП», с. 249.
- Агейчева А.О., Агейчева О.О. Можливі причини зниження фільтраційних характеристик привибійної зони пласта. Інформаційні технології: наука, техніка, технологія, освіта, здоров'я: тези доповідей XXVIII міжнародної науково-практичної конференції MicroCAD-2020, 28-30 жовтня 2020 р.: Ч. II./за ред. проф. Сокола Є.І. – Харків: НТУ «ХП», с. 150.
- Kapustenko P., Klemeš J.J., Arsenyeva O., Fedorenko O., Kusakov S., Bukhhalo S. The Utilisation of Waste Heat from Exhaust Gases after Drying Process in Plate Heat Exchanger. *Chemical Engineering Transactions*, 81, 589-594. DOI:10.3303/CET2081099
- Бухкало С.І., Агейчева А. О., Агейчева О. О., Бабаш Л. В., Пшичкіна Н. Г. Методичні аспекти реформування дистанційного навчання в системі вищої освіти. Вісник НТУ «ХП». – Х.: НТУ «ХП», 2020. – № 5(1359). – С. 3–10. DOI: 10.20998/2220-4784.2020.05.01
- Бухкало С.І. Загальна технологія харчової промисловості у прикладах і задачах (приклад та тести). 2-ге вид. доп.: ч. 2. [текст] підручник з грифом МОН. Київ «Центр учбової літератури»: 2018, 108 с.
- Бухкало С.І. Загальна технологія харчової промисловості у прикладах і задачах (приклад та тести з технології крохмалю). 2-ге вид. доп.: ч. 2. [текст] підручник з грифом МОН. Київ «Центр учбової літератури»: 2019, 108 с.
- Бухкало С.І. Загальна технологія харчової промисловості у прикладах і задачах (приклад та тести з технології переробки плодоовочевої сировини), 2-ге вид. доп. Ч. 3. Підр. з грифом. К: «ЦНЛ»: 2022, 108 с.
- Hutchins J. у Н. Somers: An Introduction to Machine Translation. London : Academic Press, 1992.
- Lagoudaki E. The Value of Machine Translation for the Professional Translator. AMTA-2008. MT at work: Proceedings of the Eighth Conference of the Association for Machine Translation in the Americas, Waikiki, Hawaii, 21–25 October, p. 262–269.
- Martin Kay. The Proper Place of Men and Machines in Language Translation. *Machine Translation 12*: 3–23, 1997. 9. Proceedings of the Eighth Conference of the Association for Machine Translation in the Americas, Waikiki.
- S. Bukhhalo. The system and models of complex treatment of industrial effluents. Інформаційні технології: наука, техніка, технологія, освіта, здоров'я: тези доповідей XXVIII міжнародної науково-практичної конференції MicroCAD-2020, 28-30 жовтня 2020 р.: у 5 ч. Ч. II./за ред. проф. Сокола Є.І. – Харків: НТУ «ХП», с. 170.
- Yunker J. Beyond Borders. *Web Globalization Strategies / John Yunker*. Boston ; Indianapolis; London; New York; San Francisco : New Riders, 2003. 552 p.
- Zetsche J. Machine Translation Revisited. *Translation Journal*. Volume 11, No. 1, January, 2007.
- Бухкало С.І., Іглін С.П., Ольховська О.І., Ольховська В.О. та ін. Приклад постановки задачі експерименту Інформаційні технології: наука, техніка, технологія, освіта, здоров'я: тези доповідей XXVIII міжнародної науково-практичної конференції MicroCAD-2020, 28-30 жовтня 2020 р.: у 5 ч. Ч. II./за ред. проф. Сокола Є.І. – Харків: НТУ «ХП», с. 171.

28. Бухкало С.І. Комплексні інноваційні системи викладання дисципліни сучасні технології харчування – моделі програмування. Вісник НТУ «ХПІ». 2022. № 2 (1364), с. 65–77.
29. Бухкало С.І., Іглін С.П., Кравченко В.О., Копейченко С.А., Назаренко М.В. Приклади та задачі комплексного викладання дисципліни харчова хімія. Вісник НТУ «ХПІ». 2022. № 2 (1364), с. 89–96.
30. Бухкало С.І. Комплексні системи викладання дисципліни основи проектування обладнання хімічних виробництв як співпраця асоціацій EFCE та CFE-UA. Вісник НТУ «ХПІ». 2022. № 2 (1364), с. 13–22.
31. Бухкало С.І., Земелько М.І. Дослідження комплексного впливу складових шоколадної маси на її властивості та конкурентоспроможність для різновидів галузей Вісник НТУ «ХПІ». 2022. № 2 (1364), с. 54–64.
12. Kalinichenko D.V., Bukhhalo S.I., Miroshny'chenko N.M. ta in. Opy'sovy'j algory'tm procesiv kry'stalizaciyi czukru. Informacijni tehnologiyi: nauka, texnika, tehnologiya, osvita, zdorov'ya: tezy' dopovidej XXVIII mizhnarodnoyi naukovo-prakty'chnoyi konferenciyi MicroCAD-2020, 28-30 zhovtnya 2020 r.: Ch. II/za red. prof. Sokola Ye.I. – Kharkiv: NTU «KhPI», p. 207.
13. Mal'ceva A.O., Bukhhalo S.I., Iglin S.P., ta in. Zagal'ni umovy' procesiv kry'stalizaciyi czukru. Informacijni tehnologiyi: nauka, texnika, tehnologiya, osvita, zdorov'ya: tezy' dopovidej XXVIII mizhnarodnoyi naukovo-prakty'chnoyi konferenciyi MicroCAD-2020, 28-30 zhovtnya 2020 r.: Ch. II/za red. prof. Sokola Ye.I. – Kharkiv: NTU «KhPI», p. 233.
14. Ol'xov's'ka V.O., Kravchenko O.S., Bukhhalo S.I. Skladovi algory'tmu poshuku racional'ny'x zakonmirmostej roboty' obladnannya. Informacijni tehnologiyi: nauka, texnika, tehnologiya, osvita, zdorov'ya: tezy' dopovidej XXVIII mizhnarodnoyi naukovo-prakty'chnoyi konferenciyi MicroCAD-2020, 28-30 zhovtnya 2020 r.: Ch. II/za red. prof. Sokola Ye.I. – Kharkiv: NTU «KhPI», p. 249.
15. Agejcheva A.O., Agejcheva O.O. Mozhly'vi pry'chy'ny' zny' zhennya fil'tracijn'y' xaraktery'sty'k pry'vy'bijnoyi zony' plasta. Informacijni tehnologiyi: nauka, texnika, tehnologiya, osvita, zdorov'ya: tezy' dopovidej XXVIII mizhnarodnoyi naukovo-prakty'chnoyi konferenciyi MicroCAD-2020, 28-30 zhovtnya 2020 r.: Ch. II/za red. prof. Sokola Ye.I. – Kharkiv: NTU «KhPI», p. 150.
16. Kapustenko P., Klemeš J.J., Arsenyeva O., Fedorenko O., Kusakov S., Bukhhalo S. The Utilisation of Waste Heat from Exhaust Gases after Drying Process in Plate Heat Exchanger. Chemical Engineering Transactions, 81, 589-594. DOI:10.3303/CET2081099
17. Bukhhalo S.I., Agejcheva A. O., Agejcheva O. O., Babash L. V., Pshy'chkina N. G. Metody'chni aspekty' reformuvannya dy'stancijnogo navchannya v sy'stemi vy'shhoyi osvity'. Visny'k NTU «KhPI». – Kh.: NTU «KhPI», 2020. – No. 5(1359). – pp. 3–10. DOI: 10.20998/2220-4784.2020.05.01
18. Bukhhalo S.I. Zagal'na tehnologija harchovoï promislivosti u prikladah i zadachah (prikladi ta testi). 2-ge vid. dop.: ch. 2. [tekst] pidruchnik z grifom MON. Kiïv «Centr uchbovoi literatury»: 2018, 108 p.
19. Bukhhalo S.I. Zagal'na tehnologija harchovoï promislivosti u prikladah i zadachah (prikladi ta testi z tehnologii krohmalyu). 2-ge vid. dop.: ch. 2. [tekst] pidruchnik z grifom MON. K «Centr uchbovoi literatury»: 2019, 108 p.
20. Bukhhalo S.I. Zagal'na tehnologija harchovoï promislivosti u prikladah i zadachah (prikladi ta testi z tehnologii pererobki plodoovochevoi siroviny), 2-ge vid. dop. Ch. 3. Pidruchnik z grifom. K: «CNL»: 2022, 108 p.
21. Hutchins J. y H. Somers: An Introduction to Machine Translation. London : Academic Press, 1992.
22. Lagoudaki E. The Value of Machine Translation for the Pro-fessional Translator. AMTA-2008. MT at work: Proceedings of the Eighth Conference of the Association for Machine Translation in the Americas, Waikiki, Hawaii, 21–25 October, p. 262–269.
23. Martin Kay. The Proper Place of Men and Machines in Language Translation. Machine Translation 12: 3–23, 1997. Proceedings of the Eighth Conference of the Association for Machine Translation in the Americas, Waikiki.
24. S. Bukhhalo. The system and models of complex treatment of industrial effluents. Інформаційні технології: наука, техніка, технологія, освіта, здоров'я: тези доповідей XXVIII міжнародної науково-практичної конференції MicroCAD-2020, Ч. II/ Ч. II/za red. prof. Sokola Ye.I. – Kh.: NTU «KhPI», p.170.
25. Yunker J. Beyond Borders. Web Globalization Strategies / John Yunker. Boston ; Indianapolis; London; New York; San Francisco : New Riders, 2003. 552 p.

Bibliography (transliterated)

1. Binytska, K., Buchkivska, G., & Kokieli, A. (2020). Requirements for system of profession-al competencies of English teacher in EU countries. Continuing Professional Education Theory and Practice (Series: Pedagogical Sciences), 2 (63), 85-90. DOI: 10.28925/1609-8595.2020.2.122.
2. Loewen, S., Li, S., Fei, F., Thompson, A., Nakatsukasa, K., Seongmee, A., & Xiaoqing, C. (2009). Second language learners beliefs about grammar instruction and error correction. The Modern Language Journal, 93(1), 91-104.
3. TESOL International Association. Standards for the Recognition of Initial TESOL Program in P-12 ESL Teacher Education.
4. British Council. Vocabulary. Level Advanced. – URL: <https://learnenglish.britishcouncil.org/vocabulary>
5. English Language Teaching; Vol. 14, No. 11; 2021 ISSN 1916-4742 E-ISSN 1916-4750 Published by Canadian Center of Science and Education
6. Fei, X., & Derakhshan, A. (2021). A conceptual review of positive teacher interpersonal communication behaviors in the instructional context. Frontiers in psychology, 12, 2623. <https://doi.org/10.3389/fpsyg.2021.708490>
7. Bukhhalo S.I. Deyaki koncepciyi stalogo rozvy'tku ukrayiny' Informacijni tehnologiyi: nauka, texnika, tehnologiya, osvita, zdorov'ya: tezy' dopovidej XXVIII mizhnarodnoyi naukovo-prakty'chnoyi konferenciyi MicroCAD-2020, 28-30 zhovtnya 2020 r.: Ch. II/za red. prof. Sokola Ye.I. – Kharkiv: NTU KhPI», p. 172.
8. Bukhhalo S.I. Osnovni vlasty'vosti plivkovogo polimernogo pokry'ttya geliokolektoriv. Informacijni tehnologiyi: nauka, texnika, tehnologiya, osvita, zdorov'ya: tezy' dopovidej XXVIII mizhnarodnoyi naukovo-prakty'chnoyi konferenciyi MicroCAD-2020, 28-30 zhovtnya 2020 r.: Ch. II/za red. prof. Sokola Ye.I. – Kharkiv: NTU «KhPI», p. 173.
9. Bukhhalo S.I. Synergetic processes of utilization-modification for polymer part of municipal solid waste. Bulletin of NTU KhPI, Kharkiv, 2017, 41 (1263), 17 – 27.
10. Bukhhalo S.I J.J. Klemeš, L.L. Tovazhnyanskyu, O.P. Arsenyeva, P.O. Kapustenko, O.Yu. Perevertaylenko. Eco-friendly synergetic processes of municipal solid waste polymer utilization. CHEMICAL ENGINEERING TRANSACTIONS. VOL. 70, 2018, pp. 2047–2052.
11. Govorov P.P., Bukhhalo S.I., Kindinova A.K., Govorova K.V. Zagal'ni zakonmirmosti sy'stemy' baktery'cy'dny'x ustanovok znezarazhennya vody'. Informacijni tehnologiyi: nauka, texnika, tehnologiya, osvita, zdorov'ya: tezy' dopovidej XXVIII mizhnarodnoyi naukovo-prakty'chnoyi konferenciyi MicroCAD-2020, 28-30 zhovtnya 2020 r.: Ch. II/za red. prof. Sokola Ye.I. – Kh.: NTU «KhPI», p. 181.

26. Zetzsche J. Machine Translation Revisited. Translation Journal. Volume 11, No. 1, January, 2007.
27. Bukhhalo S.I., Iglin S.P., Ol'xovs'ka O.I., Ol'xovs'ka V.O. ta in. Pry'klad postanovky' zadachi eksperymentu Informacijni tehnologiyi: nauka, texnika, tehnologiya, osvita, zdorov'ya: tezy' dopovidej XXVIII mizhnarodnoyi naukovo-prakty'chnoyi konferenciyi MicroCAD-2020, 28-30 zhovtnya 2020 r.: u 5 ch. Ch. II./za red. prof. Sokola Ye.I. – Kharkiv: NTU «KhPI», p. 171.
28. Bukhhalo S.I. Kompleksni innovacijni sistemi vkladannja disciplini suchasni tehnologii harchuvannja – modeli programuvannja.. Visnik NTU «KhPI». 2022. № 2 (1364), pp. 65–77
29. Bukhhalo S.I., Iglin S.P., Kravchenko V.O., Kopejchenko C.A., Nazarenko M.V. Prikladi ta zadachi kompleksnogo vkladannja disciplini harchova himija. Visnik NTU «KhPI». 2022. № 2 (1364), pp. 89–96.
30. Bukhhalo S.I. Kompleksni sistemi vkladannja disciplini osnovi proektuvannja obladdannja himichnih virobnictv jak spivpracija asociacij EFCE ta CFE-UA. Visnik NTU «KhPI». 2022. № 2 (1364), pp. 13-22.
31. Bukhhalo S.I., Zemel'ko M.L. Doslidzhennja kompleksnogo vplivu skladovih shokoladnoi masi na ii vlastivosti ta konkurentospromozhnist' dlja riznovidiv galuzej. Visnik NTU «KhPI». 2022. № 2 (1364), pp. 54–64.

Надійшла (received) 19.06.2023

Відомості про авторів / Сведения об авторах / About the Authors

Бухкало Світлана Іванівна (Бухкало Светлана Ивановна, Bukhhalo Svitlana Ivanovna) – кандидат технічних наук, професор кафедри інтегрованих технологій, процесів та апаратів, Національний технічний університет «Харківський політехнічний інститут», м. Харків, Україна;

ORCID: <http://orcid.org/0000-0002-1389-6921>; e-mail: bis.khr@gmail.com

Агейчева Анна Олександрівна (Агейчева Анна Александровна, Ageicheva Anna Oleksandrivna) – кандидат педагогічних наук, доцент кафедри загального мовознавства та іноземних мов, Національний університет «Полтавська політехніка імені Юрія Кондратюка», м. Полтава, Україна;

ORCID: <http://orcid.org/0000-0003-2184-8820>; e-mail: ageicheva@ukr.net

Роженко Інеса Віталіївна (Роженко Инеса Витальевна, Rozhenko Inesa Vitaliivna) викладач кафедри іноземних мов з латинською та медичною термінологією Полтавський державний медичний університет, м. Полтава, Україна. ORCID: <https://orcid.org/0000-0001-8334-5087> e-mail ageicheva@ukr.net

Шкіль Світлана Олександрівна (Шкіль Светлана Александровна, Shkil Svitlana Oleksandrivna) – завідувач бурового відділення, Полтавський фаховий коледж нафти і газу Національного університету «Полтавська політехніка імені Юрія Кондратюка». ORCID: <https://orcid.org/0009-0008-6108-7599> ageicheva@ukr.net

С. І. БУХКАЛО, А. О. АГЕЙЧЕВА, І. В. РОЖЕНКО, С. О. ШКІЛЬ

**ІННОВАЦІЙНІ МЕТОДИ НАВЧАННЯ ПІД ЧАС СЕМІНАРСЬКИХ ЗАНЯТЬ
У ЗАКЛАДАХ ВИЩОЇ ОСВІТИ**

У статті обґрунтовується важливість навчання студентів іноземної мови інноваційними методиками. Встановлено, що при навчанні іноземної мови як іноземної необхідно посилювати комунікативну складову. Досліджено використання кейсів на заняттях. Вивчено, що класичний кейс сприяє розвитку навичок самостійного прийняття рішень, другою метою роботи з кейсом на занятті є комунікативна практика. У статті описано можливі випадки та представлено розвиток запропонованої концепції. У статті описано технологію кейс-стаді для формування навичок критичного мислення. Встановлено, що системне використання методу кейс-стаді при вивченні англійської мови дає змогу ефективно формувати навички критичного мислення.

Ключові слова: кейси, іноземна мова, комунікація, інноваційні методи навчання.

С. И. БУХКАЛО, А. А. АГЕЙЧЕВА, И. В. РОЖЕНКО, С. А. ШКИЛЬ

**ИННОВАЦИОННЫЕ МЕТОДЫ ОБУЧЕНИЯ ВО ВРЕМЯ СЕМИНАРСКИХ ЗАНЯТИЙ
В ЗАВЕДЕНИЯХ ВЫСШЕГО ОБРАЗОВАНИЯ**

В статье обосновывается важность обучения студентов иностранному языку по инновационным методикам. Установлено, что при обучении иностранному языку как иностранному необходимо усиливать коммуникативную составляющую. Исследовано использование кейсов на занятиях. Изучено, что классический кейс способствует развитию навыков самостоятельного принятия решений, вторая цель работы с кейсом на занятии – коммуникативная практика. В статье описаны возможные случаи и представлено развитие предложенной концепции. В статье описана технология кейс-стадии для формирования навыков критического мышления. Установлено, что системное использование метода кейс-стадии при изучении английского языка позволяет эффективно формировать навыки критического мышления.

Ключевые слова: тематические исследования, иностранный язык, общение, инновационные методы обучения.