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PROJECT-BASED LEARNING AS A MEANS OF DEVELOPING SPEAKING SKILLS OF MEDICAL STUDENTS

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ПРОЄКТНА ДІЯЛЬНІСТЬ ЯК ЗАСІБ РОЗВИТКУ МОВЛЕННЄВИХ НАВИЧОК У СТУДЕНТІВ-МЕДИКІВ

Abstract. This article explores the effectiveness of project-based learning (PBL) as a pedagogical approach to enhance speaking skills of medical students, emphasizing the practical application of language within professional field. In the context of evolving medical education, the need for proficient English language skills among healthcare professionals has become increasingly topical. By integrating constructivist, experiential, communicative, and task-based learning theories, PBL fosters critical thinking, collaboration, and creativity. Through active engagement in projects such as clinical simulations, case studies, and health campaigns, students not only acquire linguistic competence but also bridge knowledge across disciplines such as biology, pharmacology, ethics, etc. This study aims to analyze the methodologies, impacts, and potential obstacles of PBL in medical English education. The findings are intended to inform English language instructors in medical educational establishments, ultimately enhancing the quality of training for future healthcare professionals in a globalized surroundings. By promoting effective communication skills, PBL serves as a vital tool in preparing a new generation of adaptable and skilled practitioners.

Key words: project-based learning; medical education; English proficiency; speaking skills; interdisciplinary integration; pedagogical approaches.

Анотація. У статті досліджено ефективність навчання на основі застосування проєктів як педагогічного підходу для покращення навичок усного мовлення у студентів-медиків з акцентом на практичному використанні мови у професійній сфері. У контексті розвитку медичної освіти потреба у вільному володінні англійською мовою за професійним спрямуванням серед медичних працівників є актуальною. Конструктивістські, експериментальні, комунікативні та навчальні підходи, орієнтовані на виконання завдання, проаналізовано у статті. Доведено, що метод проєктів сприяє розвитку критичного мислення, співпраці та творчості. Через активну участь у проєктах (клінічні симуляції, кейс-стаді (case study) та «інформаційні кампанії») студенти не лише набувають мовних компетенцій, але й активно та вміло поєднують знання з таких дисциплін, як біологія, фармакологія, етика тощо. Мета нашого дослідження – проаналізувати методології, впливи та потенційні перешкоди навчання на основі застосування проєктів у процесі вивчення англійської мови за професійним спрямуванням для студентів-медиків. Результати дослідження доводять, що навчання на основі застосування проєктів підвищує якість підготовки майбутніх медичних працівників у глобалізованому середовищі. Обґрунтовано, що розвиток ефективних комунікативних навичок є важливим інструментом для підготовки нового покоління кваліфікованих фахівців.

Ключові слова: навчання на основі проєктів; медична освіта; володіння англійською мовою за професійним спрямуванням; навички усного мовлення; міждисциплінарна інтеграція; педагогічні підходи.

Introduction. In the modern world, medical education is undergoing significant transformations driven by globalization, advancements in information technology, and new demands for the training of specialists. Among the key competencies required for healthcare professionals, proficiency in English occupies a central role. This is due to the fact that English serves as the international language of science and medicine, and its knowledge is essential for reading medical literature, participating in conferences, and communicating with colleagues from other countries.

To effectively develop speaking skills of medical students, it is important to focus not only on grammar and vocabulary but also on the practical application of the language in professional contexts. In this regard, project-based learning emerges as a powerful tool that enables students to not only acquire theoretical knowledge but also practice it in real-life situations. Project activities foster critical thinking, teamwork, creativity, and the ability to communicate effectively.

Project-based learning involves active student participation in completing tasks that have practical applications. This could include creating scientific

presentations, preparing medical case studies, developing informational campaigns, or participating in simulations. Through these activities, students have the opportunity to apply their knowledge in practice, which, in turn, enhances their motivation to learn the language.

It is also important to note that project-based learning aims not only at developing speaking skills but also at integrating knowledge from various disciplines. In the context of medical education, this can encompass biology, pharmacology, ethics, and other fields. As a result, students can see the connection between language and professional activity, making their learning experience more meaningful and productive.

However, the implementation of a project-based approach in teaching English to medical students also faces certain challenges. These may include insufficient training for instructors, limited access to resources, or a lack of time for project completion. Therefore, it is crucial to examine these aspects to find optimal solutions for integrating project-based learning into medical education.

In this article, we will explore how project-based activities can be utilized to develop speaking skills in medical students. We will analyze various methods for implementing projects, their impact on students' linguistic competence, as well as potential problems and ways to address them. We hope that the results of our research will be beneficial for English language instructors at medical universities and contribute to improving the quality of training for future medical professionals.

Thus, project-based activities can not only serve as an effective teaching method but also play a vital role in shaping a new generation of healthcare workers who are capable of thriving in a rapidly changing and demanding professional environment.

The aim – to explore the effectiveness of project-based learning in enhancing speaking skills among medical students by integrating language proficiency with practical applications in professional contexts, while also addressing the challenges and methodologies associated with its implementation in medical education.

Theoretical framework. The theoretical framework for this study on project-based learning (PBL) as a means of developing speaking skills of medical students is grounded in several key educational theories and pedagogical approaches. These theories provide a comprehensive understanding of how PBL can effectively enhance language acquisition and communication competencies in the context of medical education.

1. Constructivist Learning Theory

Constructivist theory, notably influenced by scholars such as J. Piaget and L. Vyhotsky, posits that learners construct knowledge through active engagement with their environment. Constructivist learning theory emerged in the early 20th century, primarily influenced by the pioneering work of psychologists J. Piaget and L. Vyhotsky. J. Piaget's research focused on the cognitive development of children, emphasizing that knowledge is constructed through a series of stages as learners interact with their environment. He argued that understanding evolves through processes of assimilation and accommodation, where individuals integrate new information with existing cognitive structures. Meanwhile, L. Vyhotsky introduced the concept of social constructivism, highlighting the importance of social interactions and cultural context in the learning process. He believed that knowledge is co-constructed through dialogue and collaboration with others, emphasizing the role of language as a crucial tool for thought. Together, these foundational ideas laid the groundwork for modern educational practices that prioritize active, experiential learning, where students engage in problem-solving and critical thinking, fostering a deeper understanding of concepts.

Project-based activity is a constructive and productive endeavor aimed at solving significant life problems and achieving an end result through goal-setting, planning, and execution of a project. It represents a unique method of human practice that involves anticipating the future, creating an ideal vision of it, implementing plans, and evaluating the outcomes of those plans. This approach ensures a productive connection between theory and practice in the process of education and upbringing, fostering the development of life skills among students [1, p. 53].

Working on projects inspires educators to seek out and identify new topics for discussion, to be more inventive, and to make the learning process more intensive and engaging. The project method is one of the key components of the pedagogical system designed to develop creative abilities during the education of the younger generation.

The project method is based on the development of cognitive and creative skills of students, enabling them to independently enhance their knowledge, navigate the information space, and think critically.

The process of working on a project consists of several stages:

1. Preparatory stage: defining the project topic and objectives, discussing the problem, and proposing a hypothesis.

2. Planning: identifying sources, means of data collection, methods for analyzing information, ways of presenting results, and establishing evaluation criteria for the outcome.

3. Research: conducting observations, working with information resources, surveys, and experiments.

4. Analysis: summarizing information and formulating conclusions.

5. Evaluation: assessing the results and process of the research based on established criteria.

6. Creative reporting: presenting the obtained results [2].

Projects can be classified into:

• Research project involves justifying the relevance of the chosen topic, defining the purpose and tasks of the research, formulating a hypothesis for subsequent verification, analyzing results, and using research methods such as laboratory experiments, modeling, and sociological surveys.

• Informational project is aimed at gathering information about a specific object or phenomenon for the purpose of analysis, summarization, and presentation to a wide audience. The outcome may be a publication in the media, including online platforms.

• Creative project allows for a free and unconventional approach to presenting results. This can include almanacs, theatrical performances, visual or decorative arts, and video productions.

• Role-playing project is the one where the participants assume the roles of characters. The outcome of the project remains open until its completion.

• Practically oriented project is focused on the social interests of the participants. The result is predefined and can be utilized in the lives of community members, the city, or the state [2, 3].

In the context of medical education, PBL aligns well with this theory, as it requires students to engage in real-world projects that necessitate the application of their knowledge. By collaborating on tasks such as creating presentations or developing case studies, students actively construct their understanding of both language and medical content.

2. Experiential Learning Theory

D. A. Kolb's experiential learning theory emphasizes learning through experience, where knowledge is created through the transformation of experience. PBL provides medical students with opportunities to engage in authentic tasks that mimic real-life situations they will encounter in their careers. This hands-on approach enhances their ability to communicate effectively in English, as they practice language skills in meaningful contexts [2, 5].

In a medical school, students are participating in a clinical simulation training session designed to enhance their communication skills in English, along with their clinical competencies. Students receive an overview of the simulation, including objectives such as improving their ability to conduct patient interviews, discuss diagnoses, and explain treatment plans in English. They are divided into small groups and assigned roles – some act as healthcare providers while others play the roles of patients. Each group is given a specific case scenario, such as a patient presenting with chest pain or a child with asthma. The students must conduct a mock consultation, where they ask questions, gather medical history, and provide explanations in English. After the simulation, students participate in a debriefing session where they reflect on their performance. Instructors and peers provide feedback on their communication skills, including clarity, empathy, and use of medical terminology. Students discuss what went well and what could be improved. They may role-play challenging aspects again to practice specific language structures or terminology. They also connect their experiences to real-life clinical situations they will encounter, enhancing their understanding of the importance of effective communication [6].

By engaging in this experiential learning process, students not only practice their English in a relevant medical context but also develop critical thinking, teamwork, and problem-solving skills. The hands-on experience of simulating real-life patient interactions allows them to internalize knowledge and apply it confidently in future clinical settings, illustrating D. A. Kolb's theory of learning through experience.

3. Communicative Language Teaching (CLT)

The principles of communicative language teaching underscore the importance of interaction as a means of language learning. CLT advocates for teaching that prioritizes real communication and the practical use of language. PBL embodies these principles by fostering a collaborative learning environment where students must communicate, negotiate, and present their ideas, thereby improving their speaking skills in a targeted manner.

Students are preparing for real-world clinical interactions with patients during the English for Specific Purposes course lessons. The focus is on developing their communication skills in a medical context. The instructor introduces a series of common patient scenarios that medical professionals might

encounter, such as discussing treatment options for diabetes or explaining post-operative care. Students are divided into pairs or small groups, where each group receives a specific scenario along with relevant medical vocabulary and phrases. They spend time preparing by researching the condition and formulating questions and responses in English. Each group conducts a mock patient consultation where one student plays the role of the healthcare provider and the other as the patient. During the role-play, students practice asking open-ended questions, providing explanations, and demonstrating empathy – all in English. After each role-play, students engage in a feedback session where they discuss what communication strategies worked well and what could be improved. Peers and the instructor provide constructive feedback focused on language use, clarity, and patient engagement. Students reflect on their experiences and discuss how they felt during the consultations. They might also identify areas where they felt challenged in using medical terminology or expressing empathy. The instructor facilitates a discussion on effective communication strategies, such as active listening and non-verbal cues [4, 7].

This CLT approach allows students to actively engage in meaningful communication while practicing their English skills in a context directly related to their future careers. By prioritizing real interaction and collaboration, students enhance their confidence and proficiency in using medical English, preparing them for actual patient interactions. The focus on practical language use helps ensure that they can effectively communicate with patients, fostering a patient-centered approach in their future practices.

4. Task-Based Language Teaching (TBLT)

TBLT focuses on the use of meaningful tasks as a central component of language learning. In the medical field, tasks such as conducting patient interviews, participating in discussions, and preparing informational campaigns are directly relevant. PBL incorporates TBLT by allowing students to engage in specific projects that require them to use English actively, thereby enhancing their fluency and confidence in professional communication.

Students are learning to communicate effectively in English within clinical settings during the English for Specific Purposes course lessons. The course emphasizes practical tasks that mirror real-life medical scenarios to enhance their language skills.

Students develop their ability to conduct patient interviews, utilizing appropriate medical terminology and communication strategies while practicing their speaking and listening skills. This strategy includes several steps.

1. Introduction to patient interviews. The instructor begins with a brief lecture on the importance of effective patient communication, including techniques for establishing rapport, asking open-ended questions, and clarifying patient concerns.

2. Vocabulary and phrases. Students are introduced to key vocabulary and phrases relevant to patient interviews, such as "Can you describe your symptoms?", "How long have you been feeling this way?", and "What medications are you currently taking?"

3. Listening exercise. Students listen to recorded interviews between healthcare professionals and patients to identify effective questioning techniques and communication styles.

4. Role-play setup. Students are divided into pairs. One student takes on the role of the healthcare provider, while the other acts as the patient presenting a specific case (e. g., a patient with hypertension).

5. Conducting the interview. Each pair conducts a 10–15 minute role-play of the patient interview. The "provider" uses the vocabulary and techniques learned, while the "patient" responds based on a brief scenario description provided beforehand (including symptoms, concerns, and medical history).

6. Focus on interaction. During the interviews, students are encouraged to engage in follow-up questions, demonstrate active listening, and clarify any uncertainties. This interaction emphasizes the communicative nature of the task.

7. Group debriefing. After the role-plays, students gather as a class to discuss their experiences. Each pair shares insights on what strategies were effective and what challenges they faced during the interviews.

8. Instructor feedback. The instructor provides targeted feedback on language use, communication strategies, and how well each student adhered to patient-centered practices.

9. Peer feedback. Students provide constructive feedback to their peers, highlighting strengths and areas for improvement in both language and interpersonal skills.

10. Writing component. Following the interviews, students write a reflective summary of the interview process, including the key points discussed and any recommendations they would give to the patient. This reinforces their writing skills in a medical context.

11. Role reversal. In subsequent classes, students switch roles to practice being both the provider and

the patient, allowing them to gain a well-rounded understanding of the communication process.

12. Evaluation criteria. The instructor develops a rubric for assessing the interviews based on clarity of communication, use of appropriate medical terminology, ability to engage the patient, and overall effectiveness in conducting the interview.

13. Continual improvement. Students are encouraged to reflect on their progress throughout the course, setting personal goals for improvement in both language skills and clinical communication.

Through this TBLT approach, students actively engage in meaningful tasks that are directly relevant to their future careers. The emphasis on real-life communication scenarios helps them enhance their fluency and confidence in using English in clinical contexts. By integrating both speaking and listening components, students not only learn the language but also develop essential interpersonal skills that are crucial for effective patient care. This task-based learning experience prepares them to navigate the complexities of medical interactions in their professional lives [5, 8].

5. Interdisciplinary Learning

PBL encourages interdisciplinary approaches, integrating knowledge from various fields such as biology, pharmacology, ethics, etc. This holistic perspective is crucial in medical education, where professionals must apply language skills across different contexts. By linking language learning with various disciplines, students can better understand the relevance of English in their future careers, making their educational experience more cohesive and applicable [7, 8].

6. Motivation and Engagement

Self-Determination Theory (SDT) emphasizes the role of intrinsic motivation in learning. Project-based activities that are relevant and meaningful can significantly enhance student engagement and motivation. When students perceive the value of their language skills in practical scenarios – such as presenting research findings or collaborating with peers – they are more likely to invest effort in their language acquisition [9, p. 109].

This theoretical framework establishes a foundation for understanding how project-based learning can effectively develop speaking skills of medical students. By integrating constructivist and experiential learning principles, along with communicative and task-based approaches, PBL not only enhances language proficiency but also prepares students for the complex realities of medical practice. This framework will guide the exploration of methodologies, outcomes, and challenges associated with implementing PBL in medical English education, ultimately contributing to the cultivation of skilled healthcare professionals in a globalized world.

Conclusions and Prospects for Research. This study highlights the significant potential of project-based learning (PBL) in enhancing the speaking skills of medical students, aligning language proficiency with real-world applications crucial for effective healthcare communication. By engaging in collaborative, interdisciplinary projects, students not only improve their English language skills but also develop critical competencies such as teamwork, problem-solving, and adaptability, which are essential in a globalized medical environment. The research demonstrates that integrating PBL into medical English education fosters a deeper connection between language learning and clinical practice, making the educational experience more relevant and impactful.

Future research should focus on longitudinal studies to assess the long-term effects of PBL on medical students' language acquisition and professional communication abilities. Additionally, exploring the effectiveness of different types of projects – such as role-playing, simulations, and interdisciplinary collaborations – can provide deeper insights into optimizing PBL methodologies. Investigating the training needs of instructors and the availability of resources will also be critical in addressing the challenges faced during implementation. Finally, expanding the research to include diverse educational contexts and cultures will enhance our understanding of PBL's applicability in various medical education settings, ultimately contributing to the development of globally competent healthcare professionals.

List of literature

1. Вірста С. Є. Інноваційне навчання: метод проектів / С. Є. Вірста // Нові технології. – К. : Освіта України, 2007. – Вип. 50. – С. 52–58.

2. Копилова В. В. Методика проектної роботи на уроках англійської мови / В. В. Копилова. – К. : Видавництво «Освіта», 2003. – 200 с.

3. Barak M. Problem-, project- and design-based learning: their relationship to teaching science, technology and engineering in school / M. Barak // J. Problem Based Learn. – 2020. – Vol. 7 (2). – P. 94–97. DOI 10.24313/jpbl.2020.00227.

4. Listening differently: A Pedagogy for Expanded Listening / M. Gallagher, J. Prior, M. Needham, R. Holmes // Br. Educ. Res. J. – 2017. – Vol. 43 (6). – P. 1246–1265. DOI 10.1002/berj.3306.

5. Moro C. Supporting Students' Transition to University and Problem-Based Learning / C. Moro, M. Mclean // Med. Sci. Educ. – 2017. – Vol. 27 (2). – P. 1–9. DOI 10.1007/s40670-017-0384-6.

6. Pecukonis E. V. Guidelines for Integrating Live Supervision in Simulation-Based Clinical Education: An Example for Teaching Motivational Interviewing / E. V. Pecukonis // Clin. Soc. Work J. – 2021. – Vol. 49 (2). – P. 151–161. DOI 10.1007/s10615-021-00805-z.

7. Prokop I. A. Method of specific situations analysis (case method) as a pedagogical technology / I. A. Prokop, T. V. Savaryn // Медична освіта. – 2021. – № 1. – С. 93–97.

8. Yelahina N. I. Innovative methods of teaching professional English to medical students / N. I. Yelahina, N. O. Fedchyshyn // Медична освіта. – 2021. – № 2 (91). – С. 100–106.

9. Yelahina N. I. Motivation as a key component of teaching English for medical students / N. I. Yelahina, N. O. Fedchyshyn // Медична освіта. – 2019. – № 4 (84). – С. 107–112.

References

1. Virsta, S.Ie. (2007). Innovatsiine navchannia: Metod proektiv [Innovative learning: project method]. *Novi tekhnolohii – New technologies,* 50, 52-58 [in Ukrainian].

2. Kopylova, V.V. (2003). *Metodyka proektnoi roboty na urokakh anhliiskoi movy [Methodology of project work in English lessons].* Kyiv: Vydavnytstvo «Osvita» [in Ukrainian].

3. Barak, M. (2020). Problem-, project-and design-based learning: their relationship to teaching science, technology and engineering in school. *J. Problem Based Learn.,* 7(2), 94-97. DOI 10.24313/jpbl.2020.00227.

4. Gallagher, M., Prior, J., Needham, M., & Holmes, R. (2017). Listening differently: A Pedagogy for Expanded Listening. *Br. Educ. Res. J.,* 43(6), 1246-1265. DOI 10.1002/berj.3306.

5. Moro, C., & Mclean, M. (2017). Supporting Students' Transition to University and Problem-Based Learning. *Med. Sci. Educ.,* 27(2), 1-9. DOI 10.1007/s40670-017-0384-6.

6. Pecukonis, E.V. (2021). Guidelines for Integrating Live Supervision in Simulation-Based Clinical Education: An Example for Teaching Motivational Interviewing. *Clin. Soc. Work J.,* 49(2), 151-161. DOI 10.1007/s10615-021-00805-z.

7. Prokop, I.A., & Savaryn, T.V. (2021). Method of specific situations analysis (case method) as a pedagogical technology. *Medychna osvita – Medical Education,* 1, 93-97.

8. Yelahina, N.I., & Fedchyshyn, N.O. (2021). Innovative methods of teaching professional English to medical students. *Medychna osvita – Medical Education,* 2(91), 100-106.

9. Yelahina, N.I., & Fedchyshyn, N.O. (2019). Motivation as a key component of teaching English for medical students. *Medychna osvita – Medical Education,* 4(84), 107-112.

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