Improving the Effectiveness of Teaching: The Impact of Interactive Methods in Teaching English Students as They Increase Their Proficiency Level to B2

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Abstract—The current practice of teaching foreign languages in universities is largely driven by global trends of changes in the methods and technologies of teaching, which involve the use of interactive methods. Interactive teaching methods are a means of stimulating students’ interest in learning foreign languages, as they help to make the learning process more exciting and fulfilling. The aim of the study is to propose the optimal methods of interactive teaching of English to students of medical specialties when raising their level of proficiency to B2. A method of interactive learning in speaking professional (medical) English with the use of group work methods is proposed and experimentally tested. The aim of the experimental methodology is to create a comfortable learning environment that encourages the student to interactive improvement so as to improve the skills and abilities of professional communication in English on professional topics to the B2 level of language proficiency. The results suggest a positive dynamic in the performance indicators of medical students taught with the interactive method. At the same time, the absence of positive dynamics in performance indicators is detected among the students taught using the traditional method.

Index Terms—English, students, interactive learning, interactive learning methods

I. INTRODUCTION

In today’s world, knowledge of foreign languages is considered a key competence that gives a specialist much more freedom and professional mobility, expands their information field and educational opportunities, and contributes to the establishment of interpersonal contacts and communication (Annushkin et al., 2021; Hernández García de Velazco et al., 2021).

In this light, it is a topical task to examine the efficiency of the methods of teaching a foreign language in institutions of higher education (Wagner et al., 2021). In this respect, one of the most popular approaches is the one presupposing active interaction between students and between students and the teacher. This refers to the interactive methods of teaching foreign languages, which have come to replace the communicative learning method as more effective techniques that improve students’ motivation (Panikarova et al., 2021) and determination (Bordovskaia, 2011) and make it possible to organize classes so as to engage all students in the active practice of the language (Gorbanyova, 2016; Sergeeva et al., 2021), which students need to successfully carry out professional activities (Korotaeva & Chuksina, 2020).

Literature review

Researchers (Elovskaia & Cherniaeva, 2019) argue that interactive teaching methods can be considered as those that imply active interaction between all participants in the learning process: between the teacher and students and between students. In particular, Stupina (2009) understands interactive learning as the organization of the educational process by
the teacher with a particular system of methods, techniques, and procedures based on the subject-subject relationship between the teacher and the student (parity), multilateral communication, the construction of knowledge by students themselves, the use of self-assessment and feedback, and constant activity of the student.

Literature review gives grounds to define a number of distinctive features of interactive learning: compelled activation of thinking, a learning situation in which the student is forced to be active, whether they want to be or not (Murphy & Sharma, 2010); sufficiently long-term involvement of students in the learning process, that is, their activity should be long-term, not short-term or episodic (Tuma, 2021); the period of active work of each member of the study group must correlate with the period of activity of the teacher, that is, the activity of the student must have the same duration as the activity of the teacher (Abramova, 2008); independent creative development of solutions by the study group or microgroups (Jowallah, 2008); a higher degree of motivation, initiative, and emotionality; constant interaction between the study group and the teacher through direct communication and feedback (Prince, 2004).

Thus, by interactive learning in a foreign language, we will understand the acquisition of a certain experience of using a foreign language in a process characterized by a high level of activity, a fairly significant duration of learning activities, independent creative work of students, an increased level of motivation and emotionality, and constant interaction of the group with the teacher.

Interactive methods of teaching foreign languages in universities are covered in a number of scientific works (Likhomanova & Serysheva, 2013; Marzuki et al., 2016), which comprehensively examine and cover interactive methods and training systems, in particular, the techniques and methods of creating a positive learning atmosphere and communication (Likhomanova & Serysheva, 2013), motivation for learning activities and updating of basic knowledge (Marzuki et al., 2016), the assimilation of new knowledge, the formation of skills, abilities, emotional-value orientations, and attitudes in students (Dewi et al., 2017), as well as the generalization and systematization of knowledge and the organization of reflection on cognitive activity (Kruglikov, 2013).

Dall’Alba and Bengtsen (2019) consider interactive teaching methods in the context of competence-based, communicative, culturological, reflexive, and professionally oriented approaches. Generalization, characterization, and conditions of application of interactive methods in teaching foreign languages in higher education institutions are carried out in a number of articles (Ceresia, 2016; Gill, 2013; Omar et al., 2020).

Research indicates the optimal interactive technologies for teaching students to speak foreign languages through interactive technologies: cooperative learning technologies, group and collaborative learning technologies (Bodnar et al., 2017), discussion technologies, and modeling (Zhang & Zou, 2020).

According to Rus (2020), these technologies should be used with students at the level of language proficiency not lower than average, because they require an initially high level of knowledge and insufficient knowledge of grammar and vocabulary makes it difficult for students to formulate statements at the level of text (Hsu, 2017). In addition, the training of students can involve interactive technical instruments: work with a video projector, video excerpts, work on the Internet, electronic homework, and the like (Blyth, 2018).

At the same time, the review of relevant scientific literature indicates the insufficiency of the accumulated experience and points to a need for further empirical research on this problem. In this light, despite the interactivity of the study of foreign languages as an academic discipline, we believe it necessary to research the possible methods to improve students’ interactive learning of professional English in order to raise their language proficiency to the B2 level.

The goal of the study is to determine the optimal methods of interactive learning in the English language for medical students to improve their level of proficiency to B2.

The objectives set to achieve the established goal include:

1) to determine the methods of interactive learning and group work to be used in English speaking classes aimed to raise students’ proficiency level to B2;

2) to experimentally test the efficiency of interactive learning in teaching speaking in professional (medical) English;

3) to draw conclusions on the results of the study, determine the advantages and disadvantages of interactive learning in speaking for medical students.

II. METHODS

To test the efficiency of interactive learning, we conducted an experiment with first-year medical students studying in the direction of training “Medicine and Healthcare” at the RUDN University, Russia. In total, the experiment involved 80 students, 62 of which formed four experimental groups and 18 – the control group, which was taught by the traditional methodology, i.e. with traditional types of classes, although with some elements of interactivity (dialogues, discussions).

The remaining 62 students, during the first semester of the 2021-2022 academic year, were taught using the group interactive technology with a special focus on interactive teaching in monologic and dialogic speaking on professional topics.

The pedagogical experiment was conducted in three stages.

The first stage of the experiment included an initial control, which included tasks to test knowledge of vocabulary and grammar.
At the second stage of the pedagogical experiment, the training of students in the experimental groups was conducted using group interactive technologies.

Among the actual methods of interactive teaching of professional speaking, the following were used (Table 1).

<table>
<thead>
<tr>
<th>No.</th>
<th>Methods</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>picture clues</td>
<td>the students are presented an image with a medical condition or a body organ, which they need to describe or discuss</td>
</tr>
<tr>
<td>2</td>
<td>a break to think</td>
<td>the teacher asks the students questions on the problem of treatment and gives time for discussion in small groups, after which the students present their ideas</td>
</tr>
<tr>
<td>3</td>
<td>response in unison</td>
<td>the teacher asks a question and judges on the level of the group’s preparation by the level of participation when the students answer together in unison</td>
</tr>
<tr>
<td>4</td>
<td>ethical dilemmas</td>
<td>the teacher presents certain ethical dilemmas related to medicine for students to solve or to bring their own perspective</td>
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<tr>
<td>5</td>
<td>physical answer</td>
<td>the students are asked to show their agreement or disagreement with the teacher’s statements in gestures, after which they must confirm and justify them verbally</td>
</tr>
<tr>
<td>6</td>
<td>student exit poll</td>
<td>one student from a group questions other students on a certain medical condition and then analyzes and announces the level of students; knowledge on this topic, the teacher then gives real information on the studied medical condition</td>
</tr>
<tr>
<td>7</td>
<td>“a phrase without a word”</td>
<td>the teacher offers the students a phrase that describes the studied medical phenomenon or topic, yet one word in that phrase is missing, and the students need to determine this word</td>
</tr>
<tr>
<td>8</td>
<td>“polarities”</td>
<td>the teacher gives students two opposite viewpoints on a certain medical phenomenon, the students need to determine the right solution</td>
</tr>
<tr>
<td>9</td>
<td>“riddles and guesses”</td>
<td>the teacher formulates a medical task the students need to solve in a group</td>
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<tr>
<td>10</td>
<td>“personal tasks”</td>
<td>each student is engaged in cooperation as the teacher gives a task that directly concerns every students, for example, to find among one’s acquaintances a person with a certain illness and tell about their experience</td>
</tr>
<tr>
<td>12</td>
<td>“pointer”</td>
<td>students are offered a picture of an organ and need to either ask or tell about it themselves</td>
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Students’ work in groups involved the use of the following methods (Table 2).

<table>
<thead>
<tr>
<th>No.</th>
<th>Method</th>
<th>Content</th>
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<tbody>
<tr>
<td>1</td>
<td>puzzle method</td>
<td>groups of medical students exchange participants who have mastered certain information, and together they must put together a common presentation on the phenomenon</td>
</tr>
<tr>
<td>2</td>
<td>rotation between groups</td>
<td>constant exchange of group representatives during the work process</td>
</tr>
<tr>
<td>3</td>
<td>“layered pie”</td>
<td>group discussion of a problem, change of participants, discussion of a new problem, change of participants again, and return to the original question</td>
</tr>
<tr>
<td>4</td>
<td>“three roles”</td>
<td>division of medical students into three categories – those who pose a question, those who disagree, and those who support a point of view, with students having to switch groups all the time</td>
</tr>
<tr>
<td>5</td>
<td>“movie club”</td>
<td>discussion of films devoted to a particular medical phenomenon, offering students’ own script for such a film</td>
</tr>
<tr>
<td>6</td>
<td>associations</td>
<td>students must define or show a medical phenomenon, while others guess</td>
</tr>
<tr>
<td>7</td>
<td>“blender”</td>
<td>medical students offer their own ideas on a given question, two students at first, joined by a third whose idea is consonant, and then joined by others whose ideas are logically related</td>
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</table>

At the third stage of the pedagogical experiment, final control was conducted and its results were analyzed in comparison with the initial assessment. The final control included tasks assessing the knowledge of vocabulary, grammar (single choice tests), written disclosure of the topic, as well as the oral component of the control – an interview based on prepared questions.

Statistical data processing was performed using Statistica 7.0 software. The reliability of indicators in the groups was tested by the two-sided Student’s t-test. Calculation of criterion values and confidence intervals was carried out at a significance level of p < 0.05.

III. RESULTS

The results of the experimental study are presented in Table 3.
The results of the study show that all four tested experimental groups demonstrate a positive dynamic in academic performance compared to the initial level of knowledge. In group 1, improvement in academic performance is detected as a change in the average grade from 3.9 to 4.4, in group 2 – from 4.2 to 4.75, in group 3 – from 4.0 to 4.2, and in group 4 – from 3.5 to 3.8. In contrast, the control group shows a decrease in the average grade from 3.6 to 3.45 due to the introduction of the final speaking test, as well as the lack of a positive dynamic in the knowledge of vocabulary and grammar.

The results obtained also reveal that the difference between the experimental groups and the control group is statistically significant ($p < 0.05$).

Next, the percentage distribution of the results of students in the control and experimental groups was analyzed, the data are shown in Table 4.

As follows from the above data, performance in the experimental group is improved, as there is a trend of increase in the number of positive marks, overall rise in the performance indicators, and advancement of the proficiency level up to B2. It can thus be assumed that interactive work contributes to better thinking and memory, the development of creative problem-solving skills, and more intense engagement in cognitive activities by means of the personal involvement of each medical student in the learning process. Aside from higher performance in the English language and advancement of the proficiency level up to B2 in some experimental group students, we can note the high solidarity of the students who studied by interactive methods, the development of their skills in interaction and teamwork, mutual respect, and the development of self-control and self-reflection.

In the control group, academic performance indicators are not much different; a positive dynamic is lacking. The overall result of the final control is lower in the control group compared to the initial level of knowledge, which is explained by the students’ insufficient training and absence of intrinsic motivation for learning. This low level of motivation can be attributed to students’ lack of understanding of the necessity of mastering professional (medical) English at the B2 level. In experimental groups, this understanding was fostered in students as part of interactive work by means of imitation of future professional activities in the English language.

IV. Discussion

The results of the study reveal that the process of teaching a foreign language, particularly teaching medical students professional speaking in the English language to raise their proficiency level up to B2, has to employ interactive learning techniques. Interaction in speaking necessitates the use of interactive methods as a means that directly contributes to training in communication (Marzuki et al., 2016). Our research results demonstrate that interactive technologies are conducive to the development of communicative skills, unconventional thinking, and the ability to solve new problems, thus meeting the requirements imposed by education on modern specialists. Furthermore, as part of the need for future specialists to master a professional foreign language at the B2 level, interactive learning promotes the development of the skills of foreign-language communication with colleagues, exchange of information, and finding out-of-the-box solutions in English-language sources (Omar et al., 2020).

Interactive training of students in monologic and dialogic speaking in English employs direct and indirect teaching strategies. Direct strategies of interactive learning include memorization, cognition, and compensatory strategies (overcoming difficulties, problem-solving). Indirect strategies include metacognitive strategies (determining the essence of the subject of the conversation), emotional strategies (ability to exercise self-control), and communicative-social
strategies (communicative attitude, observing the rules of etiquette and professional behavior) (Gill, 2013). Thus, interactive learning does not simply contribute to the development of certain knowledge in professional English but also fosters the skills and abilities in direct professional communication (Dolzhenkov et al., 2021).

The conducted literature review (Ceresia, 2016; Kruglikov, 2013) and the results of experimental training give an opportunity to outline the primary principles of interactive teaching of the English language to medical students: constant interaction of the teacher and students and students with each other; positive interaction and personal responsibility of each student for the results of learning. In this case, a medical student acts both as an object and a subject in the learning process and fully takes on responsibility for the final outcome.

Overall, we agree with previous research on the point that the key advantages of interactive learning for the purpose of increasing the level of proficiency up to B2 include: the activation of medical students’ cognitive activity as a result of greater interest and personal engagement of each student in the learning process and, accordingly, greater efficiency of learning (Prince, 2004); the development of communicative and teamwork skills, the formation of positive communicative learning (Marzuki et al., 2016); the development of creativity, the ability to promptly find solutions; unconventional thinking; mastery of new types of activity (Abramova, 2008). Typically, interactive classes not only form the structure of a specialist, increasing the level of proficiency in a foreign language but also produce a person who is able to work both on their own and in a team and take an unconventional approach to professional (medical) problems.

As a result of our research, we note that there are also plenty of disadvantages of interactive learning. Nevertheless, the main drawbacks, in our view, relate either to the lack of readiness of pedagogical staff to implement this type of teaching (Yu et al., 2022) or to the insufficient level of training of medical students themselves. In this regard, the introduction of interactive learning in the first year of university is possible only under the condition of detailed preparation by the teacher, clear instructions for students, identification of the methods of interaction, and their role modeling under the teacher’s supervision. This condition owes to the fact that in most high schools, teaching follows the traditional authoritarian “learn-answer” approach, and in our study, the interactive technology was challenging for first-year students. That is, the students needed more time to adapt to this form of work. Insufficiently thought-out tasks related to medical problems, the lack of initial instructions, and the inability of medical students to work as a team can be considered disadvantages, but with some reservations. As noted by participants in the experiment themselves, education at high school is focused on individual work. Teamwork is either not controlled by school teachers or assessed only based on its result. For this reason, the leaders from among school students typically perform the main work while others merely participate. Thus, those participants in the experiment who were actively immersed in the learning process through interactive methods for the first time had difficulties showing creative thinking and, at the very beginning, showed a pronounced lack of initiative. This leads us to note that if the teacher carries out thorough methodical preparation and is willing to introduce interactive teaching methods in the learning process, all the aforementioned negative factors can be easily overcome, ensuring that students reach the B2 proficiency level when studying in the field of medicine and health care.

V. CONCLUSION

As a result of the conducted research, we conclude that the goal of the interactive learning of students to speak the English language is to create comfortable learning conditions that would encourage the student to interactive improvement: to raise their skills of professional communication in English on professional topics to the B2 level.

The experiment comparing the academic performance of students taught speaking by the interactive learning methods with the use of group work and by the traditional method of teaching reveals a positive dynamic in the performance of medical students trained with interactive methods and a lack of positive change in the performance of the students taught by the classical method.

To the limitations of the study, we attribute the limited sample size and time for the experiment. The involvement of only first-year students in the pedagogical experiment has not prevented us from tracing further changes in the improvement of the proficiency level at B2 and further. The issue remaining to be studied is the degree of efficiency of the assimilation of the obtained knowledge and skills. In this respect, a prospect for further research can be an analysis of the influence of interactive learning methods on the improvement of academic performance in different years of study at the university.

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