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INTERDISCIPLINARY BINARY LECTURE AS A METHOD OF TEACHING AT TECHNICAL UNIVERSITY

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ABSTRACT

The article discusses the joint teaching of a technical discipline and English as an option for conducting an interdisciplinary binary lecture. The stages of preparation and implementation of this model of the classroom lesson are considered, as well as the positive and negative aspects of conducting a lesson by two teachers simultaneously. An opinion is expressed on the obligatory presence of the lesson plan, in which all possible bifurcation moments of the lecture are spelled out. It is concluded that an interdisciplinary binary lecture is a modern interactive teaching method that allows you to activate the audience's attention, increases the percentage of assimilation, reveals the potential of teachers, increases the professional competence of teachers, and motivates students to further study.

KEYWORDS: *Lecture, Binary Lecture, Interdisciplinary Binary Lecture, Psychological Compatibility, Interactive Lecture, Bifurcation Moments Of The Lecture, Pedagogical Scenario.*

INTRODUCTION

In Uzbekistan, on the background of a radical reform of higher education, the number of talented students studying in prestigious foreign educational, scientific and other institutions is increasing every year. Since April 1, 2021, the number of young people sent to study for Master's and Doctoral degrees at prestigious foreign universities through the 'El-Yurt Umidi' Foundation, which was created in accordance with the Decree of the President of Uzbekistan dated September 25, 2018 [1], has increased by 5 times. To obtain fundamental knowledge of the world science, undergraduates and doctoral students must not only know the basics of their specialty and be fluent in general English, their vocabulary must include the terms of the specialty being studied. Uzbekistan is located in the post-Soviet space, and all training is conducted either in Russian or in Uzbek. The volume of the school and university curriculum of the English language is sometimes not enough, and requires additional improvement of the technical vocabulary for a student who decides to continue his studies abroad. Therefore, it would be advisable to combine the study of the specialty with the study of the English language directly at the lecture in the disciplines of the studied specialty. One of the methods for studying specialized, for example, technical English vocabulary, is an interdisciplinary binary lecture. This teaching methodology will allow all students of technical universities to use the world technical literature in its original source, written in English.

LITERATURE REVIEW

The very idea of inter disciplinary teaching is not new; great teachers of the past, such as Ya.A. Komensky, K.D. Ushinsky, N.K. Krupskaya, A.A. Smirnov, G.K. Selevko, Yu.A. Samarin were interested and considered this issue in their works. The teachings of Ivan Pavlov, the great Russian physiologist introduced the psychological foundations of interdisciplinary relations. He wrote that our mental activity is a chain of irritations and associations. L.S. Vygotsky argued that any new stage of generalization arises only on the basis of the previous ones [2, p.59-73]. The naturalness of the use of interdisciplinary lectures is based on the principles of thinking ability of a student, as well as of any person, and should be structured according to the laws of both physiology and psychology. A binary lecture is a lecture delivered by two teachers at the same time and at the same place. The main goal of a binary lecture, as well as an interdisciplinary one, is the active involvement of students into the thinking process. There are several varieties of this type of classroom activity, depending on the type of specialist duo. It can be a mentor-lecturer and an intern-teacher leading practice, or there can be two highly qualified professors, but having different points of view on the topic of the lecture. The union of lecture presenters may consist of a lecturer and a student, who prepared presentation on the given topic, or there may be two teachers of related disciplines, or one of the specialists is invited from the factory, who is a highly qualified practitioner. In this article, it is proposed to combine the study of the specialty with the study of "technical" English vocabulary, and accordingly the lecturer of the technical discipline and the teacher of the English language act as the leading binary lecturers.

Methodology for preparing and delivering an interdisciplinary binary lecture. When preparing and conducting an interdisciplinary binary lecture, numerous difficulties arise, therefore, at the present stage teachers practice only one or two lectures per semester. It is most advisable to choose an overview as introductory, overview as final lecture or, at the discretion of the lecturer in the specialty, the most important lecture of the discipline, in the content of which

there is a maximum number of new terms and a high degree of complexity. Already at this stage, the first difficulty arises, since when choosing the "central" topic of the subject, the English teacher needs to master not only the terms, but also the general technical meaning of the selected material.

At the second stage of preparation, for an effective classroom lesson, it is necessary to select two teachers who are intellectually and psychologically compatible, since an interdisciplinary binary lecture is a mini performance in which students receive not only knowledge, but also acquire the skill of communication culture and dialogue. At the same time, the manner of material presentation among teachers can be completely different. For example, one of the teachers is used to explaining emotionally, using gestures and facial expressions, and the other, gains attention by quietly and calmly conducting the lesson. Mixing styles will add intrigue, which will attract the maximum number of listeners to the process of mastering new material. Transferring a lecture from a passive to an active level is one of the main methodological tasks of the proposed method. Another goal of a binary lecture is the inevitable exchange of experience between teachers.

At the third stage of preparation, a lesson plan for the lecture is developed: the volume of scientific material is determined, which is immediately divided into blocks, according to content and time [4]. It is preferable to conduct the first lessons with a written script, but with the acquisition of experience, you can get by with a verbal agreement. When giving a lecture, simultaneous translation into English is not done so as not to waste almost half of the classroom time. To check the technical material acquisition, after each block, the English teacher, using one of the question and answer methods, for example, the "funnel" method, in English, asks questions from the most general to more specific, using new terms [5, 6]. Each question that will be asked, as well as possible answers, are written in the script. If errors arise in the understanding of terminology, then the correction continues in English, and if the student does not have an understanding of the lecture material meaning, then there is an extended explanation of the technical meaning of the topic in Russian.

Let's take an example, the lecture on the discipline "Theory of mechanisms and machines" is being conducted and after the block of material on "geometrical dimensions of gearing", provided at the lecture in the Russian language, the teacher asks in English: "Which of the listed parameters is the main one through which all the rest can be calculated?". The student replies in English that this is a "engagement module", but he did not understand why it can be assigned and calculated. In this case, the explanation continues in Russian. If the respondent in the answer used not "engagement module", but "engagement unit", then the incorrect use of the term is clarified in English. And only after that clarifying the main lecture can go on with the next block of new topic material, but meanwhile giving way to the English teacher, who can check understanding of the previous block once again.

Initially, it is assumed that a binary lecture is a constant improvisation in the behavior of the presenters. Yes, teachers' speeches should be natural and unconstrained, but before the start of the lesson, they must have a behavioral scenario, especially the bifurcation moments of the lecture [7]. Putting it differently, we can say, that every improvisation must be carefully prepared. An experienced teacher will always keep in mind several possible variants of the present material explanation, and he or she can use two or three of them at the same lecture.

The behavior patterns of students are quite predictable, and there are many pedagogical and psychological techniques of interaction with the students at the lecture. Now any kind of lecture is interactive as the teacher will never leave the classroom without arranging feedback of the students in any form: oral or written, questions and answers, completing some statements by the students, etc.

Main results and conclusions

An interdisciplinary binary lecture is a special lecture in which two teachers of different disciplines participate. The purpose of the interdisciplinary binary lecture is to activate the thinking process of students. On the one hand, when perceiving a binary lecture, difficulties arise, since the focus of attention is bifurcated, on the other hand, it is the differences in behavior styles that increase concentration of attention and give a large percentage of residual knowledge. In such classes, the ability to adequately reflect on non-standard situations increases, the creativity of both students and teachers develops, reveals new forms of professional communication, creates conditions for the implementation of the creative potential of teachers, in other words, increases all aspects of professional competencies of teachers.

An interdisciplinary binary lecture is definitely an up-to-date and interactive method for preparing bachelors for further training in prestigious foreign educational and scientific institutions. This is an effective way of non-traditional organization of the educational process. "Lecture for two" is an impulse for the personal and professional growth of lecturers for whom classical teaching methods are not enough.

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