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AN INTERACTIVE METHOD OF TEACHING MEDICAL TERMINOLOGY

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Abstract
Medical terminology is the language through which future physicians read, write and speak about health and disease, yet it is still frequently taught as a long list of words to be memorised. This article examines an interactive method of teaching medical terminology that replaces passive memorisation with active, collaborative and context-based learning. The proposed model combines word-element analysis, problem-based vignettes, cooperative group work, role-play and digital tools in a four-stage cycle: orientation, discovery, practice and reflection. The paper describes the theoretical background of the method, outlines its stages and classroom techniques, proposes criteria for assessment and discusses the conditions under which it works best. The analysis suggests that interactive teaching increases learner motivation, supports long-term retention, develops communication skills and prepares students for clinical practice. The model can be adapted to medical universities and colleges where Latin, Greek and English terminology is taught to first-year students.

Keywords: Medical terminology, interactive teaching, active learning, word elements, medical education, communicative competence, gamification.

Introduction

Every branch of medicine depends on a precise professional vocabulary. A diagnosis, an operation report, a prescription and a scientific article all rely on terms that must be understood in exactly the same way by every specialist. For students entering a medical university, this vocabulary is one of the first serious obstacles. Most terms are built from Greek and Latin elements, they are long and unfamiliar, and the number of new items that must be learned in the first semester is very large. Learners who try to cope with this load by rote memorisation often forget the material soon after the examination.

In recent years higher education in Uzbekistan has been undergoing a deep reform aimed at improving the quality of teaching, introducing modern pedagogical technologies and bringing training closer to international standards [1; 2]. Medical universities are an important part of this process, because the quality of a doctor's professional language is directly connected with patient safety and with the ability to take part in international scientific communication. Within this context, the way in which medical terminology is taught deserves special attention.

The traditional lesson in terminology usually follows one scheme: the teacher presents a list of terms with translations, students copy and memorise them, and the knowledge is checked by a written dictation or a test. This scheme is simple to organise, but it has clear weaknesses. It treats every term as an isolated unit, ignores the logic of word formation, gives little opportunity to use the vocabulary in speech and leaves the student in a passive position. As a result, learners

may recognise a word on a list but fail to understand it in a clinical text or to use it correctly in a conversation with a colleague.

The purpose of this article is to describe and justify an interactive method of teaching medical terminology. The tasks of the study are: to clarify the notion of interactive teaching in relation to terminology; to present a model of a lesson cycle based on it; to describe practical techniques that can be used in the classroom; and to discuss the way in which the results of learning can be evaluated.

The word “interactive” comes from the idea of mutual action. In pedagogy, an interactive method is a way of organising learning in which all participants are involved in the process of acquiring knowledge, exchange ideas with one another and with the teacher, and jointly solve a problem [3; 4]. The teacher is no longer the only source of information; he or she becomes a facilitator who plans the activity, offers support and helps students to draw conclusions. Uzbek authors who write on innovative educational technologies stress that such methods raise the independence of students and develop their critical thinking, communication and the ability to work in a team [3; 5; 6].

Several ideas from learning theory support the use of interactive methods in terminology teaching. First, constructivism holds that knowledge is not transferred in a ready form but is built by the learner on the basis of previous experience. A student who discovers for himself that the element “cardi-” refers to the heart and then meets it in several new words constructs a lasting mental model, while a student who simply copies a translation does not. Second, the theory of social learning emphasises that understanding grows in dialogue. When learners explain a term to a partner, they are forced to formulate and test their own understanding. Third, research on memory shows that information is retained better when it is processed deeply, linked with other knowledge and retrieved repeatedly at spaced intervals rather than studied once in a large block.

The specific character of medical terminology adds further arguments. Most clinical terms are transparent for a person who knows their components: a term such as “nephrolithiasis” can be understood from the elements for kidney, stone and condition. This means that the most efficient way to master a large vocabulary is to teach the system behind it. Interactive tasks that require students to analyse, combine and decode word elements are therefore particularly well suited to the subject. In addition, terminology is a tool of professional communication, and its use should be trained in realistic situations, such as case presentations, patient interviews and the reading of medical records [4; 7].

The article is based on a theoretical and methodological analysis. The authors of Uzbek pedagogical literature on innovative and interactive technologies were studied, together with normative documents that define the direction of educational reform, and their ideas were compared with the practical needs of teaching terminology in a medical university [1–8]. The methods used were analysis and synthesis of sources, modelling of the lesson cycle, comparison of traditional and interactive approaches and generalisation of classroom experience in language and terminology teaching.

The proposed model is intended for first-year students of medical higher education institutions who study terminology in Latin, Greek-derived forms and English equivalents. It assumes groups of about fifteen to twenty-five students, lessons of eighty minutes and access to basic

equipment such as a board, printed cards and a projector, with digital devices used where available. The model is flexible: individual techniques can be separated from it and used in a shorter lesson or in independent work.

For the purposes of comparison, the traditional approach is understood as a teacher-centred lesson based on presentation, copying and memorising of word lists. The interactive approach is understood as a student-centred lesson in which the main part of the time is spent on tasks that require discussion, analysis, decision-making and the use of terms in speech.

The model consists of four consecutive stages that can be repeated in every topic, whether it is the terminology of an anatomical system, of a group of diseases or of clinical procedures.

Stage 1: orientation (about ten minutes). The lesson starts with a short problem or a visual stimulus, for example a medical report with several underlined terms, a diagram of an organ or a short audio fragment of a doctor’s speech. Students are asked what they already know and which words they can understand. This activates prior knowledge, creates curiosity and shows learners why the topic is useful. The teacher then formulates the aim of the lesson together with the group, so that students see the result they are working towards.

Stage 2: discovery (about twenty-five minutes). Instead of giving ready translations, the teacher offers tasks in which students find the meaning themselves. In the word-building workshop each group receives cards with prefixes, roots and suffixes and must construct as many terms as possible for a given system, explaining the meaning of each part. In the “term detective” task a short clinical vignette contains unfamiliar words, and the groups try to infer their meaning from the context and the known elements before consulting a dictionary. Only after this search does the teacher summarise the rules of word formation, correct mistakes and introduce exceptions. Because the rule appears at the end of an independent investigation, it is better understood and remembered.

Stage 3: practice (about thirty minutes). The new vocabulary is used in communicative activities. In a jigsaw task, every student becomes an expert in one part of the topic, for example the terms for the heart, the vessels or the blood, and then teaches this part to classmates in a mixed group. In role-play, one student acts as a doctor and another as a patient: the doctor must explain a diagnosis in professional language and then restate it in simple words, which trains both accuracy and the ability to communicate with non-specialists. Short digital quizzes, matching games and flashcards give quick feedback and add an element of competition that many students find motivating.

Stage 4: reflection and consolidation (about fifteen minutes). Students summarise what they have learned by building a concept map of the topic or by writing a brief clinical note using at least ten new terms. They also evaluate their own work and that of their peers according to simple criteria, for example accuracy of spelling, correct use of word elements and clarity of explanation. The teacher gives a final comment, identifies the typical errors that appeared during the lesson and assigns tasks for independent work, including a short list of terms for spaced repetition in the following days.

The main techniques that can be included in the stages of the model are summarised in Table 1.

Table 1. Interactive techniques and their purpose

Technique	Targeted skill	Classroom example
Word-building workshop	Analysis of roots, prefixes, suffixes	Students assemble terms such as gastro-enter-itis from cards and explain each part
Term detective	Inference and decoding	Groups decode unfamiliar terms from a short clinical vignette before using a dictionary
Jigsaw reading	Cooperative learning	Each expert group studies one body system and teaches its terms to a mixed group
Role-play dialogue	Pragmatic use of terms	A doctor–patient interview in which professional terms are translated into plain language
Digital quiz and flashcards	Retention and recall	Short timed quizzes with spaced repetition of high-frequency terms
Concept map	Organisation of knowledge	Terms of the cardiovascular system linked by cause, symptom and treatment

An interactive lesson requires an assessment system that corresponds to its aims. A single final test of translation is not sufficient, because it checks only memory. It is more appropriate to combine several forms of evaluation. Formative assessment takes place during the lesson through observation of group work, short quizzes and peer feedback; it shows the teacher which elements are not yet understood. Summative assessment at the end of a unit can include a test of word analysis, a task in which the student decodes terms from a clinical text and an oral or written presentation of a short case using correct terminology.

For the evaluation of speaking and writing tasks, a simple rubric may be used. It can contain four criteria: correct choice and spelling of terms, understanding of their structure, appropriate use in context and ability to explain the term in plain language. Each criterion may be graded on a three- or four-level scale. Such a rubric makes the requirements clear to students in advance, reduces subjectivity and helps them see how to improve. In addition, a portfolio of concept maps, glossaries compiled by the student and self-assessment sheets documents progress over the semester and encourages responsibility for one's own learning [5; 8].

The analysis shows that the interactive method offers several advantages over the traditional approach. The first is motivation. Tasks that resemble puzzles, competitions or real professional situations are more attractive than copying lists, and a student who participates actively feels more responsible for the result. The second is understanding. When learners analyse the structure of terms, they acquire a tool that allows them to interpret hundreds of words they have not met before, and this reduces the burden on memory. The third is communicative competence: through dialogue and role-play students practise the terminology as a living language and develop the confidence needed for their later clinical work. The fourth is the

development of general professional skills such as teamwork, critical thinking, time management and self-evaluation, which are important for a future physician in any specialty.

At the same time, the method has conditions and limitations. It demands careful preparation from the teacher, who must design tasks of appropriate difficulty, prepare materials and manage group work so that all students participate rather than a few leaders. Lessons may take more time than a lecture, and some students who are used to a passive role need time to adapt. Large groups and a shortage of equipment can also create difficulties. These problems can be reduced by clear instructions, by assigning roles within groups, by using simple low-cost materials such as paper cards and by gradually increasing the share of interactive tasks. It should also be remembered that interactive work does not replace systematic knowledge: the basic rules, the principal Latin and Greek elements and the most frequent terms must still be learned, and a short explanation by the teacher remains necessary.

Another important point is the integration of the Uzbek, Russian, English and Latin forms of terms. Medical students in Uzbekistan often work with several languages at once, and interactive tasks offer a natural place for comparing equivalents, noticing international roots and avoiding confusion between similar forms. Glossary-building and matching tasks are particularly useful for this purpose, and they also support the development of national medical terminology alongside the international one.

Medical terminology is not simply a set of words but a system with its own logic, and its teaching should reflect this nature. The interactive method described in this article organises the lesson in four stages – orientation, discovery, practice and reflection – and uses techniques such as word-building workshops, vignette decoding, jigsaw reading, role-play, digital quizzes and concept maps. Such an approach places the student in an active position, makes the structure of terms visible, links vocabulary with clinical situations and trains communication skills that will be needed in professional work. For successful implementation, teachers need methodological preparation, suitable materials and an assessment system that values understanding and use of terms, not only memory. Further research may test the model experimentally in different groups and compare learning results, retention over time and student attitudes with those obtained by traditional teaching.

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