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THE USE OF GAME ELEMENTS IN THE STUDY OF MEDICAL TERMINOLOGY IN HIGHER MEDICAL EDUCATIONAL ESTABLISHMENTS

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ВИКОРИСТАННЯ ЕЛЕМЕНТІВ ГРИ ПРИ ВИВЧЕННІ МЕДИЧНОЇ ТЕРМІНОЛОГІЇ У ВИЩИХ МЕДИЧНИХ ЗАКЛАДАХ

Abstract. The paper considers the possibility of using game elements in the study of medical terminology in Latin and English. Different types of games-exercises are illustrated in the examples. Such requirements for the exercises as novelty, culturological and professional orientation, and providing students in the process of doing exercises-games with necessary non-verbal basis are taken into account.

It is stressed that practical classes with the use of game technologies and elements of problem-based learning develop and improve students' skills of independent work, ability of critical thinking and acting in creative and constructive way, of fulfilling tasks given by the teacher, as well as of making adequate individual and collective decisions, and of comprehending the outcomes. A game is supposed to contribute to consolidation of a particular subject, to give examples for illustrating theoretical material visually, and to model some training situations.

It is noted that interactive methods in teaching professional terminology are the most effective for perfecting students' skills and abilities, since they perform the following tasks: 1) development of an interest for medicine on the whole and for the future professional activity particularly; 2) increase in the level of understanding and mastering English and Latin; 3) formation of professional competences a future doctor should possess; 4) development of self-dependence – ability to find methods and ways of solving tasks without assistance; 5) ability to hear an opinion of a crewmate, to be loyal and tolerant of someone else's viewpoint.

It is emphasized that practical classes with the use of game elements contribute to future doctors' training activation and effectiveness, alongside with realizing natural aspirations for communication, mutual assistance, and cooperation.

Key words: interactive training methods; role-playing game; medical terminology.

Анотація. У статті проаналізовано можливість використання ігрових моментів при вивченні медичної термінології на заняттях з латинської та англійської мов. На прикладах проілюстровано різні види навчальних ігор-вправ. Враховано такі вимоги до вправ, як новизна, культурологічна та професійна спрямованість, забезпечення студентів у процесі виконання вправ-ігор необхідними невербальними опорами.

Акцентується на тому, що практичні заняття з використанням ігрових технологій та елементів проблемного навчання розвивають та вдосконалюють у студентів навички самостійної роботи, вміння критично мислити і діяти конструктивно та творчо, вирішувати поставлені викладачем завдання, приймати оптимальні в умовах певної ситуації самостійні та колективні рішення, осмислювати результати прийнятих рішень. Гра покликана сприяти закріпленню матеріалу конкретної теми, демонструвати приклади, що ілюструють наочно теоретичний матеріал, моделювати певні навчальні ситуації.

Зазначається, що інтерактивні методи при навчанні фахової термінології є найбільш ефективним засобом удосконалення вмінь та навичок майбутніх лікарів, оскільки вирішують такі завдання, як: 1) розвиток у студентів-медиків інтересу до медицини в цілому та до майбутньої професійної діяльності зокрема; 2) підвищення рівня розуміння і засвоєння англійської та латинської мов; 3) формування термінологічних компетенцій, якими повинен володіти майбутній фахівець-медик; 4) розвиток самостійності – здатності без сторонньої допомоги знайти шляхи та методи вирішення поставленого завдання; 5) вміння почути думку іншого члена колективу, бути лояльним і терпимим до іншої думки, точки зору.

Акцентовано, що практичні заняття з використанням елементів гри сприяють активізації та результативності навчання студентів-медиків, реалізують природне прагнення до спілкування, взаємодопомоги, співпраці.

Ключові слова: інтерактивні методи навчання; рольова гра; медична термінологія.

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Introduction. Studies in the Bologna process include the use of active methods and modes of training, those of them not requiring special conditions or efforts on the part of the teacher arousing the particular interest. Educational games are among these simple yet effective training tools.

The aim – to analyse the possibility of using game elements for the study of medical terminology at the classes of the Latin and English language, quite a new step in the pedagogical science.

Methods. General scientific methods and modes have been used: analysis, synthesis, abstraction, comparison, as well as descriptive method including observation, alignment, and generalization.

Results. Game is one of the most effective forms of “teacher – students” work. With some of the games not needing particular preparation, they can be played for consolidation of lexical and grammatical material or at the final stage of working on one or another lexical section.

The educational function of the game has been known for a long time. Famous pedagogues O. I. Blyznyuk, L. S. Panova, M. F. Stronin used it as a training method and argued its significant potential for education. Playing way of working at the classes have a whole number of advantages by discovering students’ intellectual and creative abilities; helping in learning and systematizing knowledge; forming grammatical, lexical, and phonetic skills; developing all types of language activity (speaking, audition, reading, writing); stimulating voluntary memorization of the language material; providing communicative direction of educational process; developing imagination, fantasy, attentiveness, etc. [2].

Simulation games make classes diverse; help to create relaxed and well-disposed atmosphere along with removing monotony, routine, dullness, unilaterality; reveal new creative sides of both student and teacher; enable to overcome in common difficulties in mastering a subject and to realize one’s professional activity in foreign language. Besides, in the process of didactic game the students master certain social roles, acquire valuable and practical skills and abilities, as well as make themselves ready for specific life situations.

The following criteria are applied to classify educational games:

Origin: actual games (dominoes, lotto) and those developed specifically for foreign language classes (games with cards, etc.);

Purpose: games for systematizing knowledge, formation of grammatical, lexical, and phonetic skills; games for the development of speaking, audition, reading, and writing;

Type of action: games with numbers, games with cards, guess games, memorizing games, pantomime games, and some others;

Number of players: individual, pair (all students playing in pairs at the same time), group (several teams playing), collective (group playing under leader’s direction);

Available details: games using requisite (dominoes) or didactic hand-outs and purely verbal games [2].

For the games to provide realization of practical goals and actual teaching, the following factors should be taken into account:

Game reasonability and functionality. A teacher should be fully aware of the game objective and function at the particular classes.

Language orientation. All games, aimed at the formation of skills and abilities, are supposed to foreknow the end language product – word, phrase, mini-text or text (in speaking and writing), as well as their perception and comprehension (in audition and reading). Only the games, aimed at the analysis of language phenomena, mastering and systematization of language knowledge, are devoid of direct language orientation. In this case, it is mediated, since analysis and systematization of one or another language phenomena are not needed as an aim in itself, but for the realization of the language activity.

Feasibility and prevention of mistakes. Each game (especially in the group of skills formation) should contain but one complicacy and be feasible to perform under specific conditions. To avoid mistakes, various supports are provided: visual, auditory, verbal, descriptive, or graphic. Therefore, playing with cards is preferred as they provide effective and time-saving support.

Uniformity. The game is played in a foreign language only. It is advisable to formulate the rules of the game in the foreign language too.

Involvement of all students in the game. In the educational process, the games providing involvement of all students should be given preference. These are pair, group, and collective games. If the game is individual (the leader and students playing in turn), the other types of activity should be provided for those not involved: to follow the game, to count points, to prevent duplication, etc.

Logical introduction into the context of the classes. The game may be introduced into the context of the

teaching process for relaxation (“You have done a good job today, and now let us play”), or all of a sudden (“By the way, who knows more words on the subject and can put them down?”)

Competition element “Who can do more... more correctly... faster?” [2].

Our set of exercises-games focuses on the consolidation of medical terminology. Taken into account are novelty, culturological and professional orientation, and providing students with necessary non-verbal supports in the process of doing exercises-games [1, 3–7].

The skills, including lexical, are formed step-by-step:

Step I – primary consolidation of lexical units;

Step II – formation of lexical skills;

Step III – improvement of lexical skills.

The objective of Step I exercises-games is students’ introduction to sound and graphic pattern of lexical units, their semantic specifics and combinative power. At this stage, receptive-reproductive exercises on the nomination and identification are done.

Exercise 1

Find and translate the word different in pronunciation from the others:

Musculus – Cuprum - **Cito** – Collum – Costa

Sulfur – Unus – Systema – **Dosis** – Spiritus

Aër – Paediater – Gangraena – Aegrotus – Alae

Unguentum – Lingua – Sanguifer – Inguis – **Angulus**

Exercise 2

Form new words using the last letter of a previous word:

a) Crambe – Eucalypts – Sulfurr – Rheumm – medicina – Anisumm – Menthaa;

b) Rosa – arbor – rhizoma – acidum – mineralis – scapula – acer – ruber – radix.

For the students to master medical terminology at the English classes, it is practicable to play phonetic games, aimed at the correction of pronunciation, improvement of pronunciation skills and abilities in reading aloud and in oral speech. Such games seem to be useful both during phonetic correction-repetition stage of study and throughout the course of discipline learning, aiming at the students’ introduction to sound and graphic pattern of lexical units.

The ways of consolidating phonetic skills:

– *Game-puzzle*. A student pronounces words with the same sound and the others are expected to guess the sound and write its transcription on the blackboard: heel, oesophagus, peritoneum, increase, spleen ([i:]) or spine, enzyme, respiratory, stimuli, supply ([ai]);

– *Game-competition*. A teacher writes transcription of different words on the blackboard. The students are supposed to compose as many words as possible and pronounce them paying attention to correct stress and pronunciation of specific sounds. For example, with a triphthong [juə] students select the words aneurism, curable, cureless, mature, purely, annual et al.

– *Game-imitation*. Students try to reproduce a tongue twister: “Mr. Tongue Twister tried to train his tongue to twist and turn, and twit and twat, to learn the letter “T”, “Sounding by sound is a sound method of sounding sounds”, “I wish I were what I was when I wished I were what I am I wish I were what I was when I wished I were what I am” et al. The one who is the fastest and flawless in reproducing is a winner.

Exercises-games of Step II (vocabulary study skills) are aimed at practicing new lexical units. The task is to choose a lexical unit according to the plan in the semantically specified combination of lexical units.

Exercise 1

Find in the table below, which chemical meaning has one or another segment. Write out matching figures from the right column:

Segment	Chemical meaning
I. -sulfa- ?	1. Enzyme drug
II. -phen- ?	2. Presence of sulphur atom
III. -dol- ?	3. Presence of nitrogen
IV. -zin- ?	4. Presence of ethyl group
V. -io- ?	5. Presence of phenyl group
VI. -enzym- ?	6. Vitamin drug
VII. -aethyl- ?	7. Analgesic
VIII. -andr- ?	8. Hormone drug
IX. -vit- ?	9. Iodine containing drug

Answers: I – 2; II – 5; III – 7; IV – 3; V – 9; VI – 1; VII – 4; VIII – 8; IX – 6.

Exercise 2

Students are invited to play a game “Chain”. A student utters any word from the lexical minimum of some topic and his mate repeats a previous term and adds his own, and so on. The one who is able to repeat all the terms is a winner.

Sample: – dorsum;

– dorsum, oleum;

– dorsum, oleum, venenum;

– dorsum, oleum, venenum, amyllum etc.

Lexical games at English classes are aimed at practicing new terminological units, mastering word formation mechanisms, synonymy, antonymy, and homonymy; phraseological units characteristic of oral speech in the situations of professional communication. Tasks for the practical classes:

– “*Colour cards*”. Students are divided into small groups, 3-4 persons each. The groups receive 2 kits of colour cards. On the blue cards – word combinations in Ukrainian, on the red ones – their equivalent in a foreign language. The students are supposed to match these cards as soon as possible. The team that succeeds first is a winner;

– “*Ring fight*”. Students work in pairs under referee’s control. Each in the pair writes 10 terms in a foreign language and 10 word-formative elements of Latin (Greek) origin. Student A reads his words in turn to student B who is supposed to explain the term in the foreign language within 3-5 seconds or to identify word-formative elements. The value of a correct answer is one point. Students in the pair exchange their roles, and the game begins again. The referee determines a winner by the number of points gained.

– “*Lotto*”. Each student gets a lotto card with written medical terms on the subject in a foreign language. A teacher (T) interprets terms, and a student (S) is supposed to find an equivalent on the spot.

T: “the process of losing cohesion or strength” →
S: “disintegration”;

T: “the process of providing or obtaining the food necessary for health and growth” → **S:** “nutrition”;

T: “a disintegration of the surface of the skin or a mucous membrane resulting in an open sore that heals very slowly” → **S:** “ulcer”.

– “*Ping-pong*”. Students work in pairs very quickly. Student A names a word-formative element of Greek/Latin origin, and student B gives a corresponding equivalent in a foreign language, its translation in a native language and an example of a medical term with the underlying word-formative element. The roles change in turn.

Student A: pneum(o) / pulmo, ōnis → **Student B:** lung, pneumonia, pulmonary metastases;

Student B: laryng(o) / larynx, ges → **Student A:** voice box, laryngotomy, laryngectomy, laryngitis;

Student A: myel(o) → **Student B:** marrow, myeloblast, myelalgia, myelapoplexy;

Student B: trache(o) / trachea, ae → **Student A:** windpipe, tracheotomy, tracheostomy.

– “*Snow avalanche*”. A student names in a foreign language any word from the lexical minimum of a topic, his mate repeating the previous term and adding his own. The one who is able to repeat all the terms, named by his group mate, is a winner. Samle:

blood → blood count → complete blood count → complete blood count test → complete blood count test measures → complete blood count test measures

the quantity → complete blood count test measures the quantity of all the different types → complete blood count test measures the quantity of all the different types of cells.

Step III, aimed at the improvement of lexical skills, includes exercises on the introduction of a lexical unit into a simple and complex word combination, as well as “initiative exercises” [1].

Exercise 1

Choose the word corresponding grammatically to the content of a word combination:

– Suppositorium cum (extracti/extracto) Opii;

– Decoctum (baccae/baccārum) Rubi idaei;

– Divīdite (massam/massae) pilulārum;

– Recīpe (sacchāro/sacchāri) 0,2;

– Vitamīnum P e (foliis/folias) Theae.

Exercise 2

Students are invited to play a lottery-game, each of them taking a card-lottery with a task. For example: cite 5 Latin catch phrases; ask any group mate to name 4 plants; explain the meaning of the following term elements; put a word in genitive case, plural; you are lucky – pass your task to your mate, etc.

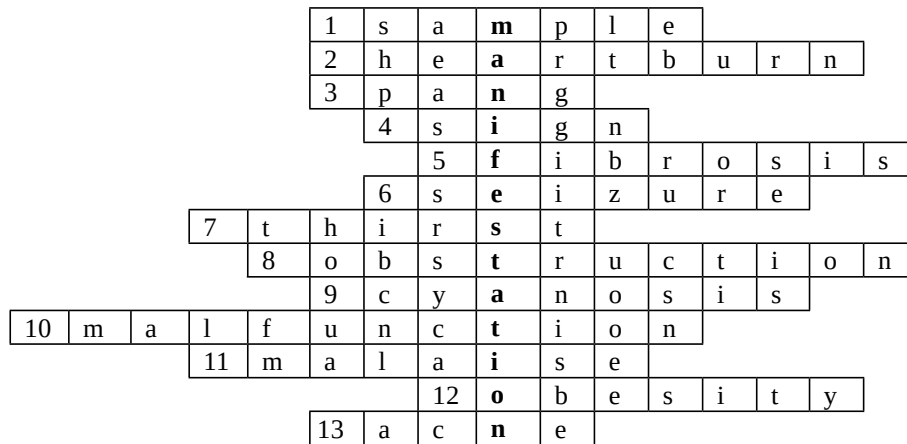
Exercise 3

When studying the subject “Cases of nouns”, students are divided into teams. The teacher names a medical term and the students give its declination and genitive ending on the “first come, first served” principle.

At this stage, lexical skills at the English classes are improved by puzzles, crosswords, and brain twisters. Here is a graphic example of the twister that can be used to consolidate the topics “At the hospital”, “Medical examination”, “Doctor’s appointment”, “Completing a medical history”, “At the polyclinic”, etc. Students are expected to fill in horizontal cells, hints below taken into account, and to find a key word aligned vertically (Fig. 1).

Professional games, associated with future medical profession, provide the best opportunities for the development of students’ cognitive activity. For example, when working on the topics “At the doctor’s office”, “At the hospital”, “At the polyclinic”, role-playing games according to the following pattern can be played: receptionist-patient; nurse of a polyclinic - out-patient; family doctor – patient. At these classes a teacher is supposed to control the students’ work indirectly, trying to create and maintain easy, well-disposed, and relaxed atmosphere.

Conclusions and Prospects for Research. It should be mentioned that the difference between the stages



1. A specimen taken for scientific testing or analysis;
2. A form of indigestion felt as a burning sensation in the chest;
3. A sudden sharp pain or painful emotion;
4. An indication of a disease detectable by a medical practitioner;
5. The thickening and scarring of connective tissue;
6. A sudden attack of illness, especially a stroke or an epileptic fit;
7. Lack of the liquid needed to sustain life;
8. Blockage of a bodily passage, especially the gut;
9. A bluish discoloration of the skin due to poor circulation or inadequate oxygenation of the blood;
10. A failure to function normally;
11. A general feeling of discomfort, illness;
12. The state of being grossly fat or overweight;
13. A general feeling of discomfort, illness.

Fig. 1. An example of a solved puzzle.

described is relative, since in the process of learning medical terminology the skills are formed fully.

Considering over the plan of a future game, the teacher is ought to select the issues the students are interested in, which would provide a basis of preparation for a game and for the independent work on the additional material.

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It is the preparation for the classes that activates students' activity. They choose and process information needed independently and revise lexical material. However, the issue of using game elements for learning medical terminology at the Latin and English classes has not been studied so far, thus requiring further study.

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