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PEDAGOGICAL CONDITIONS OF STUDYING BOTANICAL AND VETERINARY TERMINOLOGY IN LATIN

CONDICIONES PEDAGÓGICAS DEL ESTUDIO DE TERMINOLOGÍA BOTÁNICA Y VETERINARIA EN LATÍN

					
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RESUMEN
El artículo determina los sistemas lingüísticos de los idiomas latín e inglés, cuyos elementos están involucrados en el curso de muchas clases, ello implica familiaridad con los conceptos básicos del idioma latín en una universidad agraria. La metodología del trabajo fue aplicar métodos generales y especiales de conocimiento científico: análisis, síntesis, comparación y enfoque dialéctico. Se han realizado estudios en los últimos tres años. Como resultado de la investigación, se explican las formas de superar las dificultades con el uso de tareas relacionadas con la actividad creativa de los estudiantes al comparar 2-3 sistemas de lenguaje.
Palabras clave: Universidad agrícola, sistemas de lenguajes, botánica, veterinaria.

ABSTRACT
The article determines the language systems of the Latin and English languages, the elements of which are involved in the course of many classes, involving familiarity with the basics of the Latin language at an agrarian university. The methodology of the work was to apply general and special methods of scientific knowledge - analysis, synthesis, comparison and dialectical approach. Studies have been conducted over the last three years. As a result of the research, the ways of overcoming difficulties with the use of tasks related to the creative activity of students when comparing 2-3 language systems are explained.
Keywords: Agricultural university, language systems, botany, veterinary medicine.

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INTRODUCTION

Speaking about the improvement of agricultural vocational training, one should not forget the importance of all humanitarian disciplines, including Latin. This is due to the fact that the most important task of modern higher education is training not only a highly qualified specialist-agrarian, but also a comprehensively developed personality, and the knowledge and skills gained in the process of studying Latin not only expands the linguistic horizons of our students, but also improves the general linguistic culture of graduates (Ushakov, Ruchkina, Levin, Zakharova, Kostin & Golovina, 2018).

Despite the epithet of the "dead language", firmly entrenched in Latin, it still finds wide application in such areas of our activity as medicine, law, botany. Latin acquired its status as an international language of science in the 16thcentury, when much work was done on unifying and systematizing various terminologies, dictionaries for individual branches of science were produced. In the 17th-18th centuries, education and science in many countries transferred to national languages, but scientific works, especially medico-biological, were written in Latin until the 19th century.

Theophrastus, who wrote several works on plants and gave a description of 550 plants, is considered the “father” of botany. The plant classifications that existed for centuries were constantly replenished and revised, until in 1867 the International Botanical Congress in Paris adopted the so-called Laws of the Botanical Nomenclature (Kadyrova and Tatarenko, 2014).

Around the same years, a zoological classifier appeared, the rules of which were published in 1905, and the modern version is called the International Codes of Zoological Nomenclature.

As practice shows, optimization of the process of teaching Latin is possible on the basis of the continuity of linguistic knowledge and skills acquired by students in the course of learning Russian and English. Professional disciplines, the study of which goes along with the Latin language course and which can help in the practical formation of the instrumental-conceptual base are also useful (Kadyrova and Tatarenko, 2014).

In the botany class, students who study Russian and Latin names of the main plant species of the local flora experience certain difficulties not only when memorizing but pronouncing as well (Kachalkin, 2016).

One may complain indefinitely about the in-sufficient amount of study time allocated for studying phonetics, stress rules, grammar, peculiarities of the use in

the botanical nomenclature, and word-building, but no solutions for eliminating the difficulties encountered will appear. The relevance of the study is due to the need to systematize the mistakes made by students in order to select the best exercises for their elimination. Latin can be considered as a discipline with a high integrative potential, allowing to realize interdisciplinary links with many academic disciplines. At the same time, the problem of interdisciplinary relations of the Latin language course at an agrarian university was not the subject of any special study of pedagogical methodologists.

LITERATURE

Training graduates of agricultural universities, whether agronomist, zoo technician or veterinarian, is impossible without their mastering biological or veterinary terminology in Latin. Such vocabulary will help the future specialist to master the scientific language of their profession. Understanding the Latin terminology, knowledge of the names of the main types of plants and animals, as well as their diseases and the ability to apply professionally-oriented vocabulary are an important component of the vocational training of agricultural specialists (Gallego, Martinez and Herrera, 2017).

The choice of a native language as a base language for binary matching for educational purposes is caused by a high degree of proficiency in it (Kadyrova and Tatarenko, 2014; Lloyd, 2016; Miller, 2018). An attempt to integrate the material under study with data from the humanities and professional disciplines involves the use of a comparative method, consisting primarily in the comparison of Latin, Russian and English in methodological and linguistic terms.

METHODOLOGY

The methodology of the work was to apply general and special methods of scientific knowledge - analysis, synthesis, comparison and dialectical approach. Studies have been conducted over the last three years. Studying Latin at an agrarian university implies studying terminology in the framework of the training area, acquaintance with the basics of word formation and grammar, work with texts and vocabulary.

FINDINGS

PHONETIC DIFFICULTIES AND MISTAKES.

The Latin alphabet has only 25 letters, the spelling of which coincides with the writing of English ones, that is why students have a dangerous delusion that they know everything and they do not need to make any effort to master a new language. However, "No sweet without some sweat". One must not forget that mastering the technique of correct reading is an important condition for understanding. Bringing the process of reading to automation prevents inhibition of reading comprehension. Therefore, it is necessary to pay great attention to the technique of reading and to teach this intentionally.

Competent reading skills are the main task of phonetics (Miller, 2018). One can name the following common phonetic mistakes encountered when reading the Latin names of certain plants, animals or their diseases:

1. Attempts to read letter 'a' like English (æ) in words like planta (ˈplanta)–a plant, ablepsia (aˈblepsia)- blindness, alba (ˈal'ba)- white, rapa (ˈrapa)–a turnip, appendicitis (apendiˈtsitis) - appendicitis, aphis (ˈafis)–an aphid, etc.

2. Letters 'i' and 'y' are read as (i), not (ai), as it is often done in English: vita(ˈvita)–a life, influenza (infl'uˈenza)- flu,inula (iˈnul'a)–an inula, angina (angˈina) –a sore throat, hypericum (hiˈperikum) - John's-wort, psychosis (psiˈhozis) – psychosis.

3 .Another vowel that causes some discomfort when reading is letter 'u'. Remembering that in English this letter gives sound (ju:) in the open syllable, and sound (ʌ) in the closed syllable, students try to read Latin words in a similar way and make mistakes, since Latin 'u' is almost always read as (u) (urtica (uˈrtika) – nettle, ulcus (ˈul'kus) – an ulcer, Betula (beˈtul'a) – a birch, ureteritis (ureteˈritis) – ureteritis, tanacetum (tanaˈtsetum) –a tansy), excepting the case of letter combinations "qu", "su" and "ngu", in which vowel "u" gives a combination of consonant sounds (kv), (sv) and (ngv), respectively, for example: aqua (ˈakva) – water, pinguis (ˈpingvis) – fat, lingua (ˈlingva) –a language, suavis (ˈsvavis) - pleasant.

4 .Certain difficulties in reading are associated with Latin diphthongs and digraphs. Students often mistakenly read combination 'oe', trying to draw analogies with English reading (əu) or Russian version (oe). In practice, this combination in Latin is pronounced as (ő) (the sound close to English (ə:)): foedus (ˈfődus) – a treaty; oedema (ˈődema) – an edema, etc.

A much more common and causing mistakes reading is digraph 'ae', pronounced as (ae), instead of correct (æ): paeonia (pæˈonia) – a peony; aegrotus (æˈgrotus) - sick; aerinus (ˈærinus) – aerial; acaridae (akaˈridæ) –an ixodic disease; aesculus(ˈæskul'us) – an oak; anaemia (anæˈmia) –anemia; adhaesio (adˈhæzio) - adhesion.

5 .Letter 'l' in Latin, unlike English, is always read softly: vulgaris (vul'ˈgaris) – ordinary, lupus (ˈl'upus) – a wolf, lupus, alba (ˈal'ba)– white, melilotus (mel'iˈl'otus) – melilot, pulpitis (pul'ˈpitis) – pulpitis.

6 .Letter 'j' in contrast to English reading (dʒ) in Latin is pronounced as Russian (й): Januaris (Yanuˈaris) – January, Juppiter (Yuˈpiter) - Jupiter.

7 .The combination of 'ti', read in English as (ʃn) (information, motion, nation), in Latin before the following vowel is pronounced as (ts): natio (ˈnatsio) – a nation, people, nicotiana (nikotsiˈana) – tobacco, aegrotatio (ægroˈtatsio) – a disease, differentia (difeˈrentsia) – a difference.

However, after 's', 't', 'x', and also before consonants the combination of 'ti' is read as (ti): bestia (ˈbestia) – a beast, urtica(ˈurtika) - nettle, mixtio (ˈmixtio) – a mixture, sedativus (sedaˈtivus) - sedate, actinidia (aktiˈnidia) – an actinidia.

8 .The letter combination of "th", which gives interdental (θ) and (ð) in English, is read (t) in Latin: atherosclerosis (ateroskleˈrozis) –atherosclerosis, anethum (aˈnetum) – fennel, diphtheria (difteˈria) – diphtheria, mentha (ˈmenta) - mint.

SYNTACTIC DIFFICULTIES AND MISTAKES

1. Along with the phonetic difficulties when studying Latin at an agrarian university, students face many other problems that are at odds in both Russian and English. The syntax of the Latin language is peculiar, and it is necessary to get used to. As it is well known the adjective precedes the noun both in English and Russian. In Latin, the adjective follows the noun, and, of course, it causes mistakes in understanding of what has been read, and as

Linnaeus rightly stated in his book The Philosophy of Botany: "Nomina si nescis, periit et cognitio rerum" (If you do not know the names, the knowledge of things is lost).

In accordance with the binary nomenclature adopted for designation of botanical names, each of them, as a rule, consists of two words: a noun, which designates the genus of the plant and is written with a capital letter, as well as an adjective

reflecting its specific characteristic. The specific epithet may reflect some signs of the species (Triticum durum–flinty wheat), show the geographical origin (Berberis sibirica –Siberian barberry), name the place of growth (Fragaria vesca–wood strawberry), and also indicate who it is named after (Convallaria keiskei–Keiskei's lily of the valley).

Anatomical, clinical and veterinary terminology in Latin also often contains an attribute following the noun: facies articularis – an articular surface, vertebra thoracica – a dorsal vertebra, unguentum zinci – zinc oitment, situs vescerum inversus – a perverted intestines position.

Since the formation of many botanical and veterinary terms involves a relatively small number of roots of Latin and Greek origin found in a wide variety of combinations, the knowledge of their meanings makes it easier to memorize botanical and veterinary terminology.

2 .Speaking about the rules for constructing a Latin sentence, it can be noted that, basically, it is characterized by a free word order, when none of its members has a strictly fixed place. Despite this, the declarative sentence most often has a direct word order, characterized by the fact that the subject and its associated secondary members are in the first place, and the predicate and the words associated with it are in the last place.

Latin sentences with the omitted subject in the form of a personal pronoun, contradict the syntactic norms of the English sentence having both main members for sure. As a result, they also often cause certain difficulties and misunderstandings among students. For example, Ut sementem feceris, ita meets. (You reap what you dow.) or Video meliora proboque; deteriora sequor.

GRAMMATICAL DIFFICULTIES AND MISTAKES

After analyzing the ways of forming a number of grammatical categories of the Latin language, one can once again be convinced of its synthetic (inflectional) character. And indeed, grammatical relations in Latin are expressed by adding various suffixes and endings to the stem.

So, personal endings inform us about the person and the number of the verb:

cur-o (I treat), cura-s (you treat), cura-t (he treats), cura-mus (we treat), cura-tis (you treat), cura-nt (they treat);

plant-o (I plant), planta-s (you plant), planta-t (he plants), planta-mus (we plant), planta-tis (you plant), planta-nt (they plant).

An analysis of difficulties with nominal parts of speech encountered by students of an agrarian university showed that the presence of many cases is considered the most problematic one. There are only two cases in English (general and possessive) and there are 6 cases in Latin, and Latin adjectives also decline, that is, they change their case endings. It is not easy for a person who has studied English to get used to this, but if we draw a parallel between Latin and Russian, then certain similarities in this regard are easily detected. In other words, the more languages a person can use as a support when learning a "new" one, the easier it is to find in one of them some certain points of contact that will help in mastering one or another complex grammatical phenomenon.

Of course, these are not all grammatical difficulties of the Latin language, but only those that immediately put students in a stupor. Besides one can also remember:

·The gender of nouns;

·The verb at the end of the sentence;

·Many cases of no prepositional use;

·Joining a preposition or a conjunction to a word;

·The use of personal verb forms instead of the infinitive, etc.

Introduction to botanical and veterinary terms in Latin is mastering a new language material with a large number of lexical units, therefore a well-constructed learning strategy and carefully selected exercises to eliminate the difficulties encountered during the classes are the key to good knowledge of students (Kadyrova and Tatarenko, 2014; Vinogradov, Konkina, Kostin, Kruchkov, Zaharova and Ushakov, 2018; Lloyd, 2016; Wall, 2018). With all the difficulties of the process of mastering Latin, there is a good opportunity to make its study more effective by using exercises based on a combination of knowledge of Russian, English and Latin.

This is most evident when selecting words from Latin and English that have common roots, as shown in Table 1:

Table 1 - Correlation dependence of foreign vocabulary as the basis of exercises to develop Latin reading skills

Latin	English	Russian
Botanical vocabulary		
(Thymus (ˈtimus	(thyme (taim	(tiˈmyan)
(Mentha (ˈmenta	(mint (mint	(ˈmyata)
(Calendula (kaˈlendula	(calendula (kəˈlendjʊlə	(kaˈlendula)
(Eucaliptus (eukaˈliptus	(eucalyptus (juːkəˈlɪptəs	(ævkaˈlipt)
(Berberis (berberis	(berberry (ˈbəːberɪ	(barbaˈris)
(Chicorium (hiˈkorium	(chicory (ˈʧɪkərɪ	(tsiˈkoriy)
(Echinacea(æhinaˈtsæa	(Echinacea(ekiˈneiʃə	(æhinaˈtseya)
(Linum (ˈlinum	(lint (lint	(lyon)
(Paeonia (pæˈonia	(peony (ˈpɪənɪ	(piˈon)
(Rosa (ˈroza	(rose (rəʊz	(ˈroza)
Veterinary vocabulary		
(Aorta (aˈorta	(aorta(eɪˈɔːtə	(aˈorta)
(Absorptio (abˈsorptsio	(absorption (əbˈsɔːpʃn	(aˈbsorbtsiya)
(Arteria (arˈteria	(artery(ˈɑːtərɪ	(aˈrteriya)
(Kystis (ˈkistis	(cyst (sɪst	(kiˈsta)
(Musculus (ˈmuskul'us	(muscle (mʌsl	(ˈmyʃtsa)
(Nervus (ˈnervus	(nerve (nɜːv	(nerv)
(Palpare (pal'ˈpare	(palpate (ˈpælpeɪt	(pal'ˈpirovat')
(Paralysis (paraˈlizis	(paralysis (pəˈrælɪsɪs	(paraˈliʧ)
(Trauma (ˈtrauma	(trauma (ˈtrɔːmə	(ˈtravma)
(Vena (ˈvena	(vein (veɪn	(ˈvena)

Source: Authors, 2019

Despite the huge number of Latin borrowings in Russian and English, it is not always possible to pick up many examples of single-rooted terminology used in all three languages. However, even tasks that make it possible to focus on the existing difference in reading in two of the three languages we are considering also develop creative thinking and increase interest in the material under study (Table 2). Students receive similar tables in which the last column is not filled in. During the lesson they are asked to add the difference in the reading of words, and they can do it in two ways: either as suggested in the table presented by us, or by indicating only the fundamental difference of individual sounds (a / æ, t / θ).

Table 2 - Differences in the reading of words similar in Latin and English

Latin	English	Russian
Botanical vocabulary		
Citrus	citrus	(= (tsitrus)/ (sɪtrəs
Lavandula	lavender	(= (l'aˈvandul'a)/ (ˈlævɪndə
Pinus	pine	(= (ˈpinus)/ (pain
Piper	piper	(= (ˈpiper)/ (ˈpaɪpə
Thea	tea	(= (təa)/ (ti:
Veterinary vocabulary		
Infectio	infection	(= (inˈkektsio)/ (ɪnˈfekʃn
Lumbus	lumbus	(= (ˈl'umbus)/ (ˈlʌmbəz
Mucilago	mucus	(= (mutsiˈl'ago)/(ˈmjuːkəs
Myoma	myoma	(= (miˈoma)/ (maɪˈəʊmə
Trachea	trachea	(= (traˈhea)/ (trəˈkiːə

Source: Authors, 2019

DISCUSSION

As the analysis of practical classes in botany has showed, students better perceive the learning material using innovative teaching methods. As examples one can mention the quiz "Own game", crossword puzzles or matching cards with the image of plants and their names in Latin.

Students are interested in a task in which English and Latin words denoting plants, parts of the body, diseases, medicines are given in random order, and the students' task is to distribute them correctly according to their language and read them correctly. Tasks aimed at improving the skills of pronunciation should not be too simple but should be aimed at overcoming several difficulties.

Another equally popular and able to assist when memorizing terminology task is the "back translation". When doing this exercise, the work goes in pairs. Students receive lexical units in Latin, and their further work is structured as follows: translation of the obtained terminology into Russian and subsequent work in pairs, during which one of the students gives Russian words and phrases, and his friend gives the Latin equivalent without resorting to visual cues.

When studying Latin much time is given to independent work: sketching different groups of plants in a practice album with their names in Russian and Latin, as well as a written phonetic analysis of Latin plant names with a transcription, stress and syllable boundary position and justification.

CONCLUSION

One of the most important tasks of a botany or veterinary teacher, who is re-ally interested in their students' success of studying words and phrases in Latin for subsequent use in their professional activities, is the formation of positive motivation of students to their discipline, the objects of its study and the tasks offered during the class. This task requires the development of new teaching methods, allowing to use English, studied at high school and at the initial stage of university training, as an additional language support.

An important role in the formation of phonetic, lexical and grammatical knowledge and skills of Latin language is played by the principle of comparing two language systems involved in the course of many classes, providing familiarity with the basics of Latin at an agrarian university.

As a result of the study, connected with the analysis and systematization of difficulties encountered by students when studying Latin at an agrarian university, we proposed their approximate classification, which will help the teacher to anticipate many of the students' mistakes and make the process of studying disciplines related to Latin language, more interesting and fruitful, which is especially important in the context of the existing shortage of classroom time.

The study took into account the specifics of the place of teaching Latin - an agricultural university, as well as the main tasks teachers of disciplines related to Latin face: to teach students to read, to form a certain stock of professional terminology in Latin and to work with Latin texts.

Thus, determining the most frequently encountered phonetic difficulties showed that students may have certain problems with both vowel and consonant sounds, and the teacher’s task when explaining the Latin reading rules is to focus students on existing discrepancies in three languages: Latin, English and Russian.

The syntactic and grammatical difficulties we noted will help the teacher and student to avoid mistakes when working with Latin texts in their specialty. Students, remembering certain similarities of the Latin language with English or Russian, feel easier in understanding the structure of the sentence and, as a result, the meaning of the text.

Despite the significant differences between all the linguistic structures and systems of English and Latin, it is real and necessary to find common things in them. However, in some cases, in particular when explaining grammar, it seems more correct to emphasize the grammar of the Russian language, which also has quite a

lot in common with the grammatical structure of the Latin language (the declension of nouns and adjectives, cases).

If, when working with new Latin terminology, students do not have any associations with equivalent terms in the English language, it is better to abandon the use of numerous synonyms that are likely to confuse learners of the Latin language even more. Instead, it is wiser to focus on the work of the Russian-Latin lexical pair.

As studies and the experience of practical testing of the results obtained during classes have shown, tasks related to the creative activity of students when comparing 2-3 language systems gain high reputation.

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