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The adapted text on internal diseases in teaching students of medicine

ABSTRACT

The effective teaching of language for specific purposes to students of medical subjects depends on the accurate analysis of their communication needs, especially when obtaining medical education in a foreign language. The basic source of material for developing linguistic skills are the texts on internal diseases. This paper aims at analysing basic content, structural, language and compositional specifics of a type of text in academic literature for students who study medicine in Bulgarian. Its practical application is to provide some criteria for adapting authentic texts for the goals of teaching languages for specific purposes. The analysis is based on more than 30 original texts from the chapter on endocrine diseases in the textbook *Clinics of internal diseases*⁴. Sample tasks of the practical implementation of summarised text specifics in the process of teaching both Bulgarian and English as foreign languages to students of medicine have also been included.

Key words: endocrine diseases, text type, thematic structure of the text, structural units, specialized text, grammar and vocabulary, compositional plan of the text, developing communication skills.

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Introduction

The effective teaching of language for specific purposes (LSP) to students of medical subjects depends on the accurate analysis of their communication needs, especially when they obtain medical education in a foreign language. Foreign language students at the Medical University of Varna study medicine either in Bulgarian or in English. The academic texts on internal diseases constitute a natural source of material for developing students' psycholinguistic skills related to their professional qualification. Text adaptation for the needs of language teaching requires analysis and classification of its content, structure and language specifics.

Aims and objectives

The aim of this paper is to set up rather than to exhaust this vast and serious topic by: 1) **analyzing and emphasizing some basic content structural and language specifics** of a text type in the academic literature for students, learning medicine in Bulgarian, namely a text on endocrine diseases, and 2) to provide **examples of their practical application** in the teaching of language for specific purposes both in Bulgarian and English for medicine.

The observation is based on 30 original texts from the chapter on endocrine diseases from the textbook⁴ used by students at the university. Analysis is directed from the context to the text and is concentrated on language subunits. It is focused on the understanding of the text as a product of communication on the one hand, and on the other hand on understanding of the text as a process of selection and combination of language items which undergoes different stages². We find this approach more reasonable and more profoundly reflecting the text specifics as a language/lange and speech/parole phenomenon.

Characteristics of the text on endocrine diseases

The specifics of the texts on internal/endocrine diseases considered as a communicative unit is determined to a great extent by the recipient and his/her competence (linguistic, discourse, text and thematic) and by the communicative goal - to present a given endocrine disease to an academic audience, define and classify it, and explicitly describe its characteristics in certain aspects which in the clinical theory (nosology) have been accepted as a standard for presenting a given nosological unit.

From a text linguistic point of view, each nosological unit, e.g. goitre (Grave's disease), happens to be a macro topic², the contents of which unravel into a text through a variety of mini topics, which can be exhaustively listed as follows:

Definition, Classification, Epidemiology, Etiology, Pathogenesis, Pathology, Clinical picture, Diagnosis, Differential diagnosis, Treatment, Prevention, Prognosis and Ability to work.

The topics thus presented in the text with the cluster of their interconnections and interrelations build a specific **centralized** hierarchical thematic structure. On the vertex of this thematic hierarchy stands the macro topic, from which stem a certain number of specific subordinated topics. These topics in turn can be subject to further specification. For example, the mini topic *Diagnosis* can be subdivided into an even more specific topic – *Differential diagnosis*.

Some of these mini topics - *Definition, Etiology, Pathogenesis, Clinical picture, Diagnosis, Treatment* – function as basic and compulsory for the text type analysed. They represent the minimum content areas that support each macro topic (title), related to the endocrine diseases. (Fig. 1.)

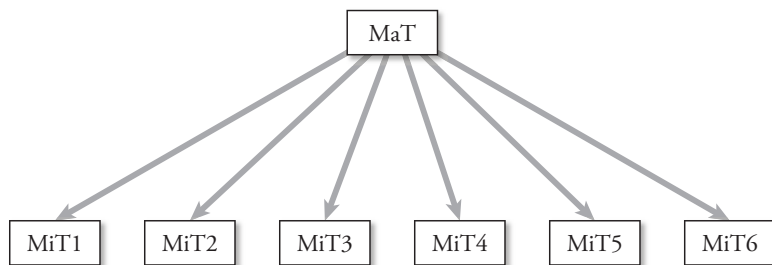


Fig. 1. (MaT – Macro theme/macro topic; MiT – mini theme/mini topic)

The rest of the mini topics – *Classification, Epidemiology, Differential diagnosis, Prevention and Ability to work*, function as elective (supplementary) and may not always be present in the content of some of the academic literature discussed. Occasionally as a variant, the mini topics included in the structural plan of the text are combined together two by two in a logically consistent manner, such as *Definition and Classification, Frequency and Etiology, Etiology and Pathogenesis, Diagnosis and Differential diagnosis, etc.*

In the linear sequence of the text, each mini topic mentioned above is explicitly formulated in a **thematic utterance**. It is a short nominative sentence (heading) graphically organized in a new paragraph and highlighted with a specific font. It designates a thematic core around which a relatively autonomous content-structural and supra-phrasal unit (SPU) or mini-text is formed². A mini topic is presented and developed in it that stems from the common thematic structure of the text. Comparative analysis shows that the separate mini texts with a common mini topic (e.g. *Eti-*

ology, Clinical picture, Diagnosis, Differential diagnosis) in the textbook texts may vary in length usually encompassing several paragraphs. But the typical communicative task of defining an illness, presenting complex causes of its onset, describing its clinical picture, diagnostic methods, etc., determines a specific selective choice of language devices, which are easily recognizable in the mini text framework.

Some **functional** and **lexico-grammatical sentence patterns** tend to emerge on this level. These models are characterized by a rich synonymic variation of verbal and syntactic form.

MText Epidemiology: ... can be found in ..; ... is spread in ...; % ofsuffer from; It affects most frequently

MText Etiology: ... is caused by...; ... develops because of...; ... most frequently is due to/ leads to ...; ... is a result of the interaction between; The reasons for are.....; is mainly responsible for the onset of ...; Factors that unlock the illness are considered ...

MText Clinical picture: ...begins (slowly, usually, imperceptibly) with...; ... causes/explains the development of a complex of symptoms such as ...; Typical symptoms of ... are ...; The most prominent symptom of ... is; The clinical picture of ... is based on the syndrome of ...; A typical/major clinical sign of ... is; ... is characterized by a detailed clinical picture; Its final stage ... presents with ...

Another characteristic feature of the functional models/patterns above, besides their rich variability, is their structural and organisational role in the mini-text – they introduce the mini-topic, determine its subsequent development as well as the logical connections between paragraphs that construct this relatively complete excerpt of the text.

Example of MText: Clinical picture (Goitre)

- (1) Goitre **presents with a detailed clinical picture** as a result of practically affecting all organs and systems

- (2) **The changes in the following organs and systems** are particularly impressive:

- (3) **Other changes:**

The typical mini text structure in the type of text on endocrine diseases thus analysed is often an ‘open’ version of the so called framework structure - it has a marked beginning and development, but there is no summary at the end of the text unit.

The framework structure can also be encountered although this is quite rare. In both cases the graphic design layout of the mini text plays an important role through the information which is segmented into paragraphs, suitably numbered or designated by other symbols.

An essential characteristic related to the development of the mini texts as a major constituent of the analysed text type, is represented by a number of terminological and specialized vocabulary and phraseology of high frequency. The choice of the necessary lexical devices is determined by the specifics of each topic in the first place. Naturally, the lexical selection depends on the individual abilities and preferences of the author, but while trying to understand the text, the recipient perceives these combinations as similar in meaning, no matter whether they are situated in a close proximity or at a distance, that is whether they have a **common semantic denominator**, which is demonstrated in each of them.

The **Clinical picture** mini text presents a good example for the most common terms: *nonsymptomatic period, onset symptoms, advanced symptoms, pronounced symptoms, asymptomatic progress of a disease, neurological symptomatics, acute hormonal deficiency, complete/partial clinical picture, initial stage of a disease, main stage of a disease*. On the mini text of **Diagnosis** we observe *history of a disease, physical examination, diagnostic investigations, laboratory data, X-rays, hormonal tests, instrumental investigations, CT, scintigraphy, functional tests*.

The **linguistic cohesive devices** that help the presentation of content, establish the logical sequence of sentences and the connection between the paragraphs, are yet another characteristic feature of the mini text. Lexical and **terminological repetitions** are used: anaphoric pronoun forms (*this, that, such, those, them, its*), combined with lexical repetitions (*these symptoms, these impairments/disorders, such complaints, such a change*); adjectives (*the last, the former, the latter, the previous*), ordinal numbers (*first, second, third*), combinations of demonstrative pronouns (*some of these, those*), cohesive expressions, mainly prepositional-nominal collocations with a connective function (*as a result of, in the course of time, part of*) and connective sentences (*it is difficult, it has been established so far*).

It is important to emphasize the frequent use of conjunctive adverbs such as *mainly, rarely, primarily, characteristically, typically, thus*. **Connective sentences with modal meaning** are also typical, e.g. *it is possible, it is important*. There is a marked presence of some connective sentences, which contain a summary of the information given in the text: *it is recommended, it is suggested that, this is particularly obvious, initially it was considered, for the time being it is accepted that, according to this hypothesis, it is widely accepted...*

An essential characteristic feature of the text type used in the subject area of endocrine diseases is its **logical compositional plan**, which involves a specific logical sequence of the mini texts in the framework of the entire narrative.

The linear segmentation of several structural units (parts that carry certain information value in the text as a whole) in a definite logical sequence, emerges as a common principle of the composition of the analysed text type. The comparative analysis of the texts on endocrine diseases shows the existence of a compositional matrix, which has been commonly accepted in nosology as a well-established standard for describing a disease.

Deviations from this matrix as a result of the subjective approach of a given author have not been detected. The complete description of the compositional plan can be seen in the following figure. (Fig. 2.)

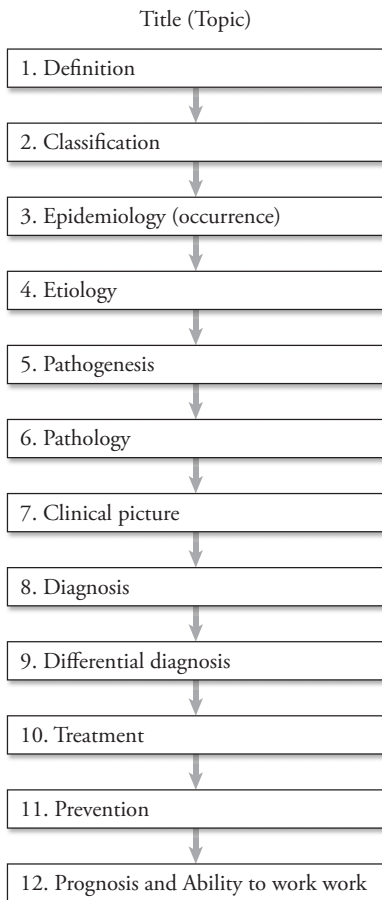


Fig. 2.

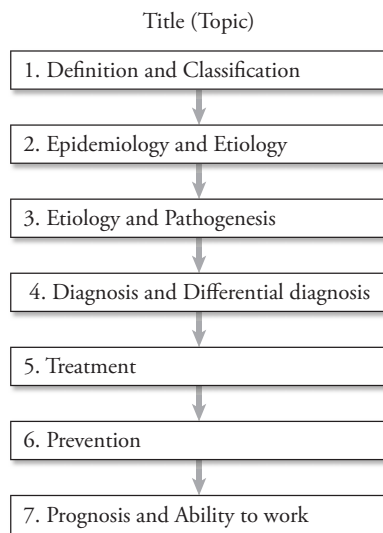


Fig. 3.

There exist different versions of the listed structural components combined two by two (*Definition and Classification; Epidemiology and Etiology; Etiology and Pathogenesis; Diagnosis and Differential diagnosis*), without impairing the objective criterion of the logical sequence mentioned above. (Fig. 3.)

Sample tasks from English textbooks

Examples from the textbooks **English for Medicine**⁷ and **English for Pharmacy**⁶ based on the specific features of the text type of endocrine diseases are demonstrated below. Similar activities to the ones with the students who study Bulgarian can be observed from the teaching of English for medicine, pharmacy, dental medicine, obstetrics to multicultural groups at the same university. The textbook authors have taken into consideration Scott Thornbury's definition of genre in which he points out that "A genre is a text-type whose features have become conventionalized over time."⁸ In the context of teaching foreign languages for medical purposes a description of a disease is an example of a specific genre. Thus "A genre analysis approach not only respects the integrity of the whole text but regards the features of a text as being directly influenced by its communicative function and its text of use."⁸

The teaching of Bulgarian to students of medicine takes place in the course of a few years and includes 120 contact hours per academic year, while only 60 contact hours are allotted to teaching English. Yet sufficient time is devoted to raising awareness of the text structure, text patterns and logical compositional description plans of different diseases. When students learn how to describe a given disease in English they are also asked to identify the text structure. Only this time texts are usually shorter and the above mentioned rubrics are typically five in number: *Definition, Causes, Signs and Symptoms, Diagnosis* and *Treatment* or the more modern and wider term *Disease Management*. Occasionally we may have *Prognosis* and *Prevention* as well. Typical tasks that students perform are to read the paragraphs of a text silently and to identify the meaning of each paragraph. Thus the text structure is elicited from the students. A subsequent activity could be for students to rearrange a jumbled paragraph applying the model mentioned above. Then, as a homework assignment, they have to choose a disease and write a short description following the logical pattern they have already discovered. Here are some examples of tasks to be performed in English for Medicine and English for Pharmacy.

English for Medicine⁷

Reading

Task 1. Below is a textbook excerpt about pneumonia. Having in mind the structure of such a text type from the previous unit, arrange the paragraphs in their logical order. Write a subtitle for each paragraph.

1 – 2 – 3 – 4 – 5 –

Pneumonia

a	Diagnosis follows a physician's examination and, usually, a chest X-ray. A specimen of the sputum is examined and cultured to identify the infective organism. Sometimes a white blood cell count may help to determine whether the infection is caused by bacteria or by a virus.
b	Pneumonia is inflammation of the lungs, usually caused by a bacterial, viral, or fungal infection or from inhaled matter. If infection spreads down the bronchioles, it is known as bronchopneumonia. If only one lung is inflamed, it is called lobar pneumonia. Before the development of antibiotic drugs in the 1940s, pneumonia killed about one third of its victims. Today, with proper medical treatment, over 95% of all patients recover. But pneumonia still ranks as a leading cause of death in the USA.
c	In bacterial pneumonia, the patient develops the symptoms of a cold followed by a sudden shivering attack, sputum that is often bloody and a high fever (40°C) with rapid respiration and pulse rate. The patient feels pain on one side of the chest. Vomiting and diarrhoea may occur; confusion is common. In other forms of pneumonia, especially among elderly patients, the symptoms may develop slowly, with clear evidence of bronchitis and a worsening cough, often with bloodstained sputum. Headache, muscle aches, and cyanosis are common. Progress depends on the individual's resistance to the type of infection. In elderly or weak patients death is possible. Children or babies show few symptoms suggesting a chest infection. But the child is obviously ill and may collapse.
d	Antibiotics are used in the treatment of bacterial and fungal infections. Breathing exercises and percussion to shake the chest wall encourage the patient to cough up sputum. If the sputum is thick and sticky steam inhalations may also help. A seriously ill patient may need oxygen therapy. Painkilling drugs are prescribed if the patient has pleurisy. Most patients suffering from mild forms of pneumonia can be treated at home with rest, antibiotics, and breathing exercises.

e	<p>In most cases, a person gets pneumonia by inhaling small droplets that contain harmful viruses or bacteria. These droplets are sprayed into the air when an infected person coughs or sneezes. Many cases of pneumonia result when bacteria normally present in the mouth, nose, and throat invade the lungs. The body's defence mechanisms ordinarily prevent these bacteria from reaching the lungs, but if the defences weaken enough, severe pneumonia may develop. Such infections occur most often among patients hospitalised for some other serious illness. Conditions that increase the risk of pneumonia include emphysema, heart disease, alcoholism, and other diseases that weaken the body's resistance to infections. Children and the elderly also have a greater chance of getting pneumonia. A wide variety of viruses cause pneumonia, including some of the same ones responsible for influenza and other respiratory infections. Many types of bacteria also cause pneumonia; most cases of bacterial pneumonia result from the bacteria pneumococci, also known as <i>Streptococcus pneumoniae</i>. In the lungs, microbes that cause pneumonia lodge in the air sacs, where the blood normally exchanges carbon dioxide for oxygen. There they multiply rapidly and the air sacs soon fill with fluid and white blood cells produced by the body to fight infection.</p>
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English for Pharmacy⁶

Reading and Vocabulary

Task 1. Read the texts about rheumatoid arthritis and fibromyalgia and label the paragraphs with appropriate headings. Note how the texts are structured. What is the reason behind this way of structuring?

	Rheumatoid arthritis	Fibromyalgia	
	<p>Arthritis is a disease that causes pain and loss of movement of the joints. The word "arthritis" literally means joint inflammation (arthr = joint, -itis = inflammation), and refers to more than 100 different diseases. Rheumatoid arthritis can be one of the most disabling types of arthritis. Its course varies from a few symptoms to severe and painful deformities.</p>	<p>Fibromyalgia is a real medical condition. It includes all-over muscle pain that can make it hard to do even day-to-day tasks. The pain may vary from mild to severe. The muscle pain from fibromyalgia is one of the most common types of chronic widespread pain in the U.S. People with fibromyalgia may not know what is wrong with them or what is causing their pain. They may feel alone.</p>	

	<p>The cause of rheumatoid arthritis is unknown. Some scientists feel that it may result from an infection, but there is no evidence that it is contagious.</p>	<p>The exact causes of fibromyalgia still are not known. However, recent research suggests that changes in the central nervous system may be responsible for the chronic pain that comes with fibromyalgia. Nerve damage may occur for a few reasons, e.g. a viral or bacterial infection. Nerve damage could also be linked to injury.</p>	
	<p>For whatever reason, the joint lining becomes very inflamed and thickened, slowly destroying cartilage and bone. Rheumatoid arthritis typically affects the small finger joints, wrists, knees and toes. All joints of the body, however, are potential targets. Along with swelling and pain of joints, some of the early symptoms of the disease may include fatigue, loss of appetite, weight loss and fever. Stiffness in the joints and surrounding muscles that lasts for several hours after getting up in the morning is a regular symptom. Sometimes the disease involves other organs, causing damage to the heart, lungs, eyes, skin and nerves.</p>	<p>People with fibromyalgia typically have many different types of symptoms. Some of the most common symptoms may include:</p> <ul style="list-style-type: none"> • Chronic widespread muscle pain • Muscle soreness • Tenderness • Flu-like aching <p>Other symptoms may include:</p> <ul style="list-style-type: none"> • Problems sleeping • Morning stiffness • Fatigue • Dull pain in the muscles 	
	<p>Rheumatoid arthritis may take a long time for a definite diagnosis to be reached.</p>	<p>Even though the pain of fibromyalgia is hard to ignore, it may be difficult for some doctors to identify this condition. For example, no blood test or X-ray can be used to help detect it. Plus, many of the symptoms of fibromyalgia are also found in other conditions, such as rheumatoid arthritis. According to the American College of Rheumatology (ACR), to be diagnosed with fibromyalgia, a person must have widespread pain lasting for at least 3 months, plus pain in at least 11 of 18 parts of the body called “tender points.”</p>	

<p>The goal of treatment is to halt the inflammation and prevent the destruction of joints. Doctors now have many ways of treating rheumatoid arthritis. Large doses of aspirin or aspirin-like drugs can be effective in reducing pain and inflammation. If the arthritis is aggressive, drugs called DMARDs or SAARDs (disease-modifying antirheumatic drugs, or slow-acting antirheumatic drugs) such as the anti-malarials may be used. Certain immunosuppressants biologic response modifiers, corticosteroids, or gold therapy may be used. All these drugs require close supervision, since they may have hazardous side effects.</p> <p>Rest, heat and physical therapy are important adjuncts to drug therapy. A healthy diet and exercise also helps patients retain mobility and strength, maintain or lose weight, sleep better, and even help maintain a positive attitude.</p> <p>Although there is no scientific evidence that eating or not eating certain foods reduces or aggravates symptoms of rheumatoid arthritis, some recent studies indicate that omega-3 fatty acids (found in certain fish and plant seed oils) may reduce the inflammation of rheumatoid arthritis.</p>	<p>LYRICA® (pregabalin) capsules CV is indicated for management of fibromyalgia and not for improvement in specific symptoms such as problems sleeping and fatigue.</p> <p>Exercise, such as walking, jogging, biking or gently stretching muscles may help ease the pain of fibromyalgia. So can having good emotional support and medication. People with fibromyalgia have more treatment options than they did in the past.</p> <p>Fibromyalgia can be treated by several types of healthcare providers. Family physicians, general internists, and rheumatologists are the doctors who typically treat fibromyalgia.</p>	
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For Your Portfolio⁶

Choose a disease or disorder of the musculoskeletal system. Following the pattern already used for describing a disease, write a short description paying special attention to its treatment and management.

In English classes attention is also paid to cohesive devices, anaphoric and cataphoric references, as well as the thematic progression in paragraphs but these activities are not so frequently used when teaching English as they are when teaching Bulgarian for the reasons mentioned above.

Conclusion

The specific characteristics of the text type on endocrine/internal diseases presented above outline some criteria for the selection and adaptation of authentic academic texts with the aim of teaching a foreign language for medical purposes to students who study medicine in Bulgarian or in English. Lecturers are expected to make adequate decisions and implement them appropriately in the process of teaching, learning and acquiring linguistic skills based on a specialized text as a basic communicative unit in the academic environment.

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