

*Vorobiova L. V.,
PhD in Education,
Assistant at the Department of Foreign Philology,
Ukrainian Studies and Social and Law Disciplines of Mykhailo Tuhan-Baranovskyi
Donetsk National University of Economics and Trade*

*Kuts M. O.,
PhD in Education,
Senior Lecturer at the Department of Foreign Philology,
Ukrainian Studies and Social and Law Disciplines of Mykhailo Tuhan-Baranovskyi
Donetsk National University of Economics and Trade*

MASTERING TERMINOLOGICAL FEATURES THROUGH TRANSLATION OF A SPECIAL ENGLISH TEXT

Summary. The article deals with terminological features translation while translating a special English text. Technical translation requires great linguistic and professional skills at the same time one of the major complications in technical translation is the complexity of the terminology. For students mastering the terminological features in the engineering field, vocabulary is one of the most essential components of all comprehension.

The work focuses on Industrial and Civil Engineering vocabulary and its terminological aspects. Exploring the efficiency of translation on the basis of the texts in Industrial and Civil Engineering terminology in translation-oriented terminology courses for university students is the main **objective** of the article. It is focused on the ways for enhancing the students' foreign language competence by teaching terminology and as a result, bridging the gap between studying and working in the Translation industry.

The aspect of polysemy, i. e. multiple meaning of a term is studied. It is stated that in one meta-language paradigm it is also a significant drawback of terminology. But synonymy, as a lexical variety, is unacceptable in scientific and technical, special literature. It was given the analysis of such terms as *aggregate* (заповнювач), *beam* (балка), *building* (будівля, будівництво), *construction* (будівництво), *design* (проект), *engineering* (інженерія, будівництво), *girder* (балка), *structure* (конструкція), *joist* (балка) etc. They are often used in civil engineering sphere, and may cause a certain semantic danger when distinguishing them.

Moreover, the authors pay attention to basic simple civil engineering terms of Greek, Latin and French origin directly which may be easily transliterated into Ukrainian.

To conclude, great linguistic and professional skills, using the reliable dictionaries while translating special English text tend to overcome difficulties for students of non-specialized faculties to distinguish between the ambiguities of the terms and as a result lead to mastering terminological features of technical translation in the field of civil engineering.

Key words: technical translation, civil engineering terms, polysemy.

Introduction. The activation of the international communication, international cooperation in various spheres, as well as academic mobility led to the updating of the set of competencies

determined by the curricula of Ukrainian higher education institutions. The acquisition of these competencies can be realized through the organization of the educational process in foreign language classes, as well as the content of the educational material itself, in particular, technical texts with special terminology. This led to the emergence of many studies in the field of intro- and extra-linguistic conditions of foreign language acquisition.

We will focus on some teaching and learning aspects of the English language which provide mastery of the foreign language and may be quite beneficial for the students' future professional career. Majority of Ukrainian universities are located in the industrial centers. The universities or institutes which train future specialists in translation tend to give professional training in accordance with the demand on the industrial enterprises. But the circumstances of the year 2022, made the Ukrainian interpreters also to be involved into voluntary work, translating for Temporary Assistance programs for Ukrainian individuals and non-Ukrainian individuals, Refugee Resettlement programs, charities or institutions offering various kinds of assistance programs. However, due to the international nature of many Ukrainian businesses in mining, metallurgy, agriculture, demand is rather high for technical translation as well.

There is no need to prove what an important role scientific and technical translation plays in the formation and development of literary language norms, which is the main sign of a full-fledged nation (the destruction of language is almost the most important component of national genocide). Technical translation requires great linguistic and professional skills. One of the major complications in technical translation is the complexity of the terminology. For students mastering the terminological features in the engineering field, vocabulary is one of the most essential components of all comprehension. Some researchers point out that more attention should be given to teaching specialized vocabulary. Therefore, facilitating students' vocabulary acquisition is a major focus in translation-oriented terminology university courses. While developing practical terminology management skill of students, the translation-oriented terminology courses target to introduce students to the realm of terminology management and functionality and how to obtain terminological information and manage it for translation purposes.

The objective of the article is to explore the efficiency of using terminology in translation-oriented terminology university courses. It is focused on the ways for enhancing the students' foreign language competence by teaching terminology through translation of the texts in Industrial and Civil Engineering, bridging the gap between studying and working in the translation industry.

Results and discussion. The process of translation implies interpreting a source text and generating a target text in another language finding the right match. It is known that the terminology of any field of knowledge or profession is not a certain set of individual words, word combinations, symbols, but a certain and sufficiently defined system. Regardless of its structure, the term has its meaning only as a component of a certain terminological system, paradigm. The term should name a special concept, and this is its main nominative function. The function of reflecting the content of the concept is equally important as well. The requirements for terms comprise the following principles: limited content, accuracy, brevity, lack of synonyms, and semantic properties.

Fixed meaning and lack of synonyms determine the accuracy, compression and conciseness of a term. This means that any term in a certain paradigm of concepts should have a limited meaning and should not depend on the context. If polysemy, i. e. multiple meaning of a term, occurs in one paradigm of concepts, it is the most significant drawback of a term. This drawback is able to destroy the structure of its meaning-making features and depriving it of its semantic properties. One of the reasons for polysemy is the limitation of vocabulary material compared to the number of terminological concepts. Moreover, in textbooks and training manuals, the authors' desire to simplify the text and bring it to the level of general understanding, explaining this by the limited lexical minimum that a student should know [1, p. 3].

Thus, working with texts in Industrial and Civil Engineering, students easily translate simple technical terms of Greek, Latin and French origin directly transliterating them into Ukrainian. These terms are usually unambiguous and do not depend on the context. In addition, they are easily transliterated into Ukrainian, and it is enough for a student to know the direct meaning of such words as:

- Greek origin words: *hydrant* (гідрант), *plastic* (пластик), *xerography* (ксерографія (метод копіювання креслень, виготовлення матриць)) [2, p. 365];
- Latin origin words: *anchor* (анкер), *armature* (арматура), *cement* (цемент), *excavation* (екскаваторні роботи), *monitoring* (моніторинг), *perforate* (перфорувати), *radius* (радіус), *radiator* (радіатор) [2, p. 33];
- French origin words: *isolator* (ізолятор), *parapet* (парапет, парапетне огороження), *relay* (реле), *reservoir* (резервуар), *stability* (стабільність (будівельної конструкції)), *standard* (стандарт), *veneer* (фанера, шпон) [2, p. 386].

The term must be unambiguous. Ambiguity makes it difficult to understand and needs an extended context. For example the word "design" is known to students as «дизайн», «задум», «план», and in the engineering context it means «проект» [1, p. 197]. It seems appropriate to introduce definition to avoid misunderstanding of this term for example:

1. *Engineering design is the process of applying the various techniques and scientific principles for the purpose of defining a device, a process or a system in sufficient detail to permit its physical realization.*

2. *The design and construction field has realized that computer-aided drafting and design can work and can be cost effective.*

The detail design is customarily carried out on the layout board or computer screen, and for people in engineering this is what the term "design" means [3, p. 297]. So, in technical translation the word "designer" means «проектант», for example:

1. *Many subprofessionals who are given the job title "designer" are responsible for a design extends to the last detail, also many technicians are available to assist in the latter stages of this endeavor.*

2. *Designers can catch potential design mistakes early, before construction begins and corrections become expensive.*

But there is also a synonymous term "project", which has not the same meaning. The term "project" means «проект» as well, but it refers to an individual or collaborative enterprise that is carefully planned to achieve a particular aim, for example:

1. *Lest it be thought that a design project should be expected to proceed neatly down through all the phases directly in order, special mention must be made of iteration.*

2. *It is the duty of the engineer to design the project which will most nearly satisfy the needs of the occupant at the lowest practical cost.*

The words *build, building* is known to students in the meaning of «будувати», «будівництво», but in the context of Civil Engineering, the term *building* means «будівля», «споруда», «комплекс будівель» for example, administrative building (адміністративна будівля), control building (диспетчерський пункт), multistory apartment building (багатопверховий будинок), store/storage building (складська будівля, склад), temporary building (тимчасова будівля) [2, p. 94–96]. Example:

1. *The two indentations on the sides of the building, shown on the site plan, are revealed by the floor plans to be additional first-floor entrances, connected by a long corridor.*

2. *Clients can explore their house or building on a predetermined path or a path of their own choosing.*

At the same time, the word *будівництво* in the meaning of branch of industry or field of study more often is translated as "Civil Engineering". It results because the definition of the term "engineering" itself, which is commonly adopted, is too wide. Follow the example:

Engineering is the field of industry, profession in which knowledge of the mathematical and natural sciences is applied with judgment to develop ways to utilize, economically, the materials and forces of nature for the benefit of mankind.

For example, Industrial and Civil Engineering (промислове та цивільне будівництво), Civil Engineering faculty (будівельний факультет), Marine Engineering (морське будівництво), Urban Engineering (міське будівництво). Taking into consideration the focus of the article on the Civil Engineering terminology, the follow these examples of using the term Engineering in the specific area:

1. *Civil Engineering is concerned with the planning design and construction of all the nation's constructed facilities.*

2. *Major structures such as highways, bridges, dams and tall buildings are the fruits of civil engineering.*

The civil engineering analog to manufacturing is *construction*. Moreover, the term *construction*, in the meaning of the erection process will be translated as «будівництво» and in the meaning of building structure it can be translated as «конструкція» for

example: Light/ lightweight construction (легка конструкція, будівництво з легких конструкцій), prestressed constructions (попередньо напружені конструкції), construction site (будівельний майданчик), construction of traffic facilities (будівництво транспортних споруд, транспортне будівництво) [3, p. 33]. Example:

1. *Chemically resistant concrete may be sometimes used in the **construction** of structures attacked by chemically active media, i. e. industrial, hydraulic, and underground structures.*

2. *Plain concrete was employed by the Egyptians, Romans and Greeks in the **construction** of aqueducts and bridges, in the construction of roads and town walls.*

At the same time the term *structure* is mainly translated as «конструкція», for example: all-welded steel structure (цільнозварена сталева конструкція), building structure (будівля, конструкція будівлі), dangerous structure (аварійна будівля), engineering structure (інженерна споруда), precast structures (збірні залізобетонні конструкції). Example:

1. *The use of aluminium in **structures** may well expand in corresponding manner as simultaneous advances are being made with the development of improved aluminium materials and products.*

2. *Round concrete columns are indicated as supporting the entrance canopy, and square and round columns are located in various points within the **structure**.*

Sometimes the words seem to be familiar to students, but such term as *aggregate* can turn out to be false friend of the translator, because in the civil engineering context it is more often translated with the meaning «заповнювач», «інертний матеріал» (бетону). Example:

1. *The sand, gravel (or broken stone) are termed “**aggregate**”; sand is known as “fine aggregate”, and gravel as “coarse aggregate”.*

2. *The type of **aggregate** used has an appreciable effect upon both the amount of water and the amount of **aggregate** that can be mixed with given quantity of cement.*

Some difficulties arise for students in understanding and translating such words as, for example, *drawing*, which is known to them only in the sense of «малюнок», «зображення», but in the texts in civil engineering it is used in the sense of «креслення», technical drawing (креслення), architectural drawing (архітектурне креслення). Example:

1. *Technical courses in architectural print reading, building materials, and construction methods, which in technical schools often prerequisites to architectural **drawing** provide the needed background.*

2. *Sketching is used by technicians and designers as a means of communicating preliminary ideas, basic design schemes, and rough **drawings** of details.*

Synonymy in one meta-language paradigm is also a significant drawback of terminology. The positive role of synonyms in fiction literature is well known. But synonymy, as a lexical variety, is unacceptable in scientific and technical, special literature. Redundant synonymous terms violate the principle of economy of the meta-language system. Synonyms overload the memory, because students have to learn not only a large number of special concepts of the specialized text, but also a large number of synonymous terms expressing these concepts. For example, the word «балка» (конструктивний елемент у вигляді стрижня

(бруса), що зазнає здебільшого згину) in civil engineering is translated as “beam”, “girder”, “joist”. Example:

Girders, beams, and joists are terms given to horizontal structural members used in buildings.

At the same time, there is a certain semantic danger when distinguishing them, as in cases with terms. So, using synonymous terms of the word «балка», students learn to distinguish it as follows [3, p. 173]:

1. “beam” (балка) is a long, sturdy piece of squared timber or metal used to support the roof or floor of a building. Example:

1) *There are very fine oak **beams** in the oldest part of the house;*

2) *In small homes it is usually more practical to build up the wood **beam** using the same-size framing material as that used for joists, shown in Fig. 2-46 D;*

2. “girder” (балка) is a large iron or steel beam or compound structure used for building bridges and the framework of large buildings [2, p. 327]. Example:

1) *Designed to hold transverse loads, bridge **girders** evenly distribute weight to ensure structural integrity, stability, and are readily available in a variety of sizes to suit any project need;*

2) *Engineered wood **girders** such as glue laminated lumber (glulam), laminated veneer lumber, and parallel-strand lumber are available;*

3. “joist” (балка) is a length of timber or steel supporting part of the structure of a building, typically arranged in parallel series to support a floor or ceiling [2, p. 397], [3, p. 181]. Example:

1) *In case of either a concrete floor with a basement below or a fireproof flat roof, the use of concrete **joists** is appropriate;*

2) *If ceiling **joists** are too tie with the rafters to counteract lateral thrust, consideration must be given to their direction; otherwise, joists are placed to result in the shortest span for economy.*

Also, some difficulties arise for students in understanding and translating such terms as “dead load” and “live load”. Therefore, it is not surprising that students, not understanding the meaning of the word combination “dead load” and “live load”, translate literally as «мертве навантаження/завантаження» and as «живе навантаження/завантаження». While by “dead load” is meant the weight of the structure itself, the walls, floors, ceilings, roof and movable partitions, and it will be translated as «постійне навантаження». Example:

1) *The various building codes specify the weights per square or cubic foot of wood, stone, plaster, stone, steel, terra cotta, and other structural materials comprising the **dead load**;*

2) *In a three-span bridge the theoretical advantage of continuity is about 49 % for a **dead load** and 16 % for a live load.*

By “live load” is meant the weight of the furniture, equipment, occupants, stored material, snow on the roof, and movable partitions and it will be translated as «прикладне навантаження». Example:

1) *Wind pressure, really a lateral load, is often classed as a **live load** but may be considered as producing a separate stress;*

2) *The **live loads** should include all except the dead loads.*

So, for example, an expression “turn-key” basis” students sometimes translate as «поворот ключем», while in the civil engineering terminology it is translated as «під ключ», «на умові\ основі «під ключ». Example:

1. *We have carefully studied your comments on our draft contract for the construction of the power station in Zaporizhia on a “**turn-key**” basis.*

2. A *Turnkey contract* is one under which the contractor is responsible for both the design and construction of a facility.

Translation of acronyms is also a difficult thing for students, mastering the terminology. They are difficult to remember, they can be synonymous and therefore need an extended context for their understanding and translation, for example: *AutoCAD* (*computer-aided design – система автоматизованого 2-D та 3-D проектування і розрахунку*), *ArchiCAD* (*computer-aided design – система автоматизованого проектування і розрахунку для архітекторів*), *CAD* (*computer-aided design – система автоматизованого проектування і розрахунку*), *CADD* (*computer-aided drafting and design – система автоматизованого проектування і розрахунку*); *BFRP* (*Basalt Fiber Reinforced Polymer – базальтопластиковою арматура*), *CFRP* (*Carbon Fiber Reinforced Polymer – вуглепластиковою арматура*), *GFRPB* (*Glass Fiber Reinforced Plastic Bar – склопластиковою арматура*).

Conclusion. To sum up, despite technological advances in automated translation, the outlook remains very positive for language learners using the reliable dictionaries. The use of high-quality specialized dictionaries is important for professional translators and other users to work effectively. A lack of English-Ukrainian on construction and constructional technologies dictionaries affects the quality and timing of the technical translation. Our experience shows that it is difficult for students of non-specialized faculties to distinguish between the ambiguities of the terms [4, p. 125]. As synonymy in one meta-language paradigm is a significant drawback of terminology. The complexity of the terminology and difficulties in translation in civil engineering field maybe overcome are for students through translation activities of special English texts.

References:

1. Kemper J. *Engineers and their profession* / J. Kemper. Oxford : Oxford University Press, 2002. 346 p.
2. Pozdniakov O., Bykov V. *English-Russian dictionary on construction and new constructional technologies* / O. Pozdniakov. M. : Rus. Yaz., 2003. 846 p.
3. Muller E. *Architectural drawing and light construction* / E. Muller. Boston : Pearson Education, Inc., 2010. 538 p.
4. Muller E. *Reading architectural working drawings: commercial construction* / E. Muller. Boston : Pearson Education, Inc., 2002. 408 p.

Воробйова Л., Куц М. Засвоєння термінологічних особливостей шляхом перекладу спеціального англійського тексту

Анотація. У статті розглядаються термінологічні особливості перекладу спеціального англійського тексту. Технічний переклад вимагає лінгвістичних і професійних навичок, водночас однією з головних складнощів технічного перекладу є складність термінології. Для студентів, які опановують термінологічні особливості в інженерній галузі, словниковий запас є одним із найважливіших компонентів.

Робота зосереджена на лексичі промислового та цивільного будівництва та її термінологічних аспектах. Мета статті полягає в дослідженні ефективності перекладу на основі текстів промислового та цивільного будівництва на курсах, орієнтованих на переклад термінології для студентів вищих навчальних закладів. Стаття розглядає шляхи підвищення іноземної мовної компетентності студентів шляхом викладання термінології та, як наслідок, подолання розриву між навчанням і подальшою роботою в індустрії перекладу.

Вивчається аспект полісемії, тобто багатозначності терміна. Зазначається, що в одній метамовній парадигмі це є істотним недоліком термінології. Але синонімія, як лексичний різновид, неприпустима в науково-технічній, спеціальній літературі. Проаналізовано такі терміни, як *aggregate* (*заповнювач*), *beam* (*балка*), *building* (*будівля, будівництво*), *construction* (*будівництво*), *design* (*проект*), *engineering* (*інженерія, будівництво*), *girder* (*балка*), *structure* (*конструкція*), *joist* (*балка*) та вирази *dead load* (*постійне навантаження*), *live load* (*прикладне навантаження*) та ін. Такі терміни часто використовуються у сфері цивільного будівництва і можуть викликати певну семантичну небезпеку при їх розрізненні.

Крім того, автори звертають увагу на основні прості будівельні терміни безпосередньо грецького, латинського та французького походження, які можна легко транслітерувати українською мовою.

Підсумовуючи, високі лінгвістичні та професійні навички, використання надійних словників під час перекладу спеціального англійського тексту сприяють подоланню труднощів для студентів неспеціалізованих факультетів, пов'язаних з багатозначністю термінів і, як наслідок, призводять до засвоєння термінологічних особливостей технічного перекладу в галузі цивільного будівництва.

Ключові слова: технічний переклад, будівельні терміни, полісемія.