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# TERMINOLOGICAL DICTIONARY AS THE ORGANIC PART OF ELECTRONIC TEXTBOOK

**Abstract:** The study deals with principles of creation of terminological dictionaries which represent the organic part of electronic textbooks. It characterizes their importance and advantages in comparison with classical dictionaries. A special attention is devoted to selection of terms as headwords of dictionaries and definitions of notions named by particular terms. It presents also many of typical mistakes, which made authors of such dictionaries.

**Key words**: electronic textbooks, educational terminological dictionaries

## 1 Introduction

Currently the electronic textbooks are very popular form of presentation of a teaching matter both in present as in distance education forms. There is in each teaching matter some amount of new notions, which have to be explained and acquired by learners. The function fulfil didactically transformed definitions in entries of dictionaries (glossaries). As in textbooks absent indexes generally, it is for learners oft a problem to find a definition of a particular notion after longer time. The problem many authors of textbooks solve by special terminological dictionaries placed mostly at end of textbooks. One can appreciate positively the including of such dictionaries into textbook, but only provided that they meet many general requirements.

The aim of this contribution is to express more exactly the requirements to such dictionaries, as many authors have no sufficient terminological literacy and culture and make different mistakes. Such mistakes are demonstrated in the case of the terminological mini-dictionary placed in the textbook of informatics (1) and that one of a larger dictionary (2). The terminological culture of the textbook was positively appreciated in (3), but users were aware of some terminology mistakes and shortcomings in it.

## 2 Terms and notions

Everybody who creates a terminological dictionary has to respect the essence of the relation between a notion and a term. Notion and terms are often understood as equivalent expression. Such interpretation is very incorrect. It is important to stress that the two words *notion* and *term* are names of two different notions. The term *notion* (its synonym *concept* is also used oft) is name for a scientific category in the philosophical discipline theory of knowledge, which has an abstract nature and generalizes some essential properties of a class of particular real or imaginary objects. **The content of a**

**notion is expressed only by its definition**. The word *term* is only a word or phrase naming for a particular notion and **serves only as communication equivalent of the particular notion**, as a communication by means of definitions is very inconvenient and not rational. A term can express some information about the content of a notion, but oft it is absent. **A term can not in any way replace its definition** therefore. The difference between notion and term is distinguished also by terminology of dictionaries: *entry* corresponds with notion and includes headword and its definition, *headword* corresponds to the particular term. Headwords are distinguished from texts of entries typographically (e.g. in bold) and entries are separated by optical gap as a rule.

Acquiring of a notion in education comprises simultaneous acquiring both of definition and term. Each definition has an internationally accepted content, but most of terms are words and phrases of a national language. In the case of terms any additional information is inevitable in many cases, e.g.:

1. In the case of terms with false motivation, as in the case of the Slovak term *konská sila* (horse power). Sila in the term corresponds to English term *force* and its unity is newton. To English term power corresponds in this case the term *výkon* the unity of which is watt).

2. In the case of terms which don't correspond with the content of a particular notion, and give a false information about it. As example we can quote the term *dielectric constant* which is oft used instead of the correct term (*electric) permittivity*). Actually the quantity depends on several factors generally, e.g. on intensity and frequency of electric field, and also on temperature of surrounding.

3. In the case of homonymous terms, which by oneself or after inadequate shortening of a phrase term have the same form as another term or even more terms. Such term loses their substantial property – unambiguity.

4. In the case of synonymous terms, it is in the case when the same notion has more than one term, e.g. the pairs of terms *diphenyl / biphenyl, pixel element / pixel, teaching, instruction.* In the case of trade (proprietary) names like *teflon, nylon* is necessary to inform users that they don't represent terms. The true terms in this case are *polytetrafluoreth(yl)ene* (international symbol *PTFE*) and *polyamide* (international symbol *PA*). It is important to include all existing synonymous terms into dictionary, one from them, main or most frequent as full entry, i. e. headword with definition, and other as reference headwords, i. e. headword without definition but with link to main entry. Synonyms must not be placed in parallel as one headword.

5. In the case of terms with a special orthography, e.g. *internet* is a term for an arbitrary international net, while the word *Internet* is trade name for the global net.

6. In the case of terms which are borrowed from foreign languages in another, adapted form, such as the terms *softvér* in Slovak and *szoftver* in Hungarian in comparison with original English term *software*.

## 3 General prerequisites for creation of terminological dictionaries

In each case of creation of a terminological dictionary author(s) have to respect the requirements of general terminological science, and also that ones of didactics and that ones of rational limits of space.

The main methodological requirement of terminological science is that the definition of **each** term must contain an answer to the fictitious (unspoken) question "what is the entity named by the headword of the particular entry?" Exceptions to this rule are synonymous terms and shortenings, respectively symbols. In case of synonymous terms one can recommend to put in brackets **all** synonymous terms at the beginning of a definition, and also include as separate headwords **each** synonymous term. The reference can be expressed e.g. by symbol →, messaging to headword at which is placed its common definition. It is not rational to repeat the common definition at each synonymous term. In the case of shortenings and symbols it is necessary to place their full wording and it is rational to explain also their etymology. It is not rational duplicate definition which is placed at main entry, and it is sufficient only link to the main entry. **No unexplained shortened forms have to be used in the texts of definitions**.

The main didactical requirement to a terminological dictionary is that **every** new notion for acquiring should take place in it as **separate** entry and that in definitions of notions in entries can be used **only** notions, terms and words which are familiar for learners. Definitions should be laconic, it is that they contain **only** the answer on the main fictitious question and no other information takes place in their text, except from synonymous terms, respectively shortened forms of the particular headword.

Definitions should be correct also from the point of formal logic, orthography and that one of stylistics.

## 4 Specific features of terminological dictionaries in electronic textbooks

In teaching of various subjects learner must acquire a certain number of new notions and their terms in order to understand correctly the contents of the text, and interpret them correctly. The new notions must be incorporated without mistakes in his/her own system of knowledge and in that in notion system of the particular learning subject. Therefore classic textbooks contain in many cases small-scale terminological dictionaries in which the new or problematic notions and their terms are explained. The dictionary can place in the beginning of textbook or of each chapter or, what is more frequent, in the end of them. The state school program limits the number of new notions and terms in one subject and thematic unit. The National Framework Program for both primary and secondary schools in Slovak Republic prescribes which notions and terms learners have to acquire. The first meeting with the new notion and term is very important for each learner. The correct understanding of the notion and term and its adoption in the context not only creates conditions for its proper passive perception but also for its later active use.

Also electronic textbooks and course books contain terminological dictionaries, which can be used not only separately as a source of information, but also operatively during the lecture. It has been obtained considerable experience concerning dictionaries in electronic textbooks, presented in many information sources, e.g. (4) till (7).

The main specific feature of dictionaries in electronic textbooks is that they are not so strongly limited in space as the traditional ones in printed textbooks. A lot of important information can duplicate. The second main feature is the extremely high quickness of information searching.

Operational use of dictionary is allowed with reference (link) to the used term placed as headword in entry of dictionary. Disclosure of the definition can be realized in various ways. For example: The definition may appear as a footnote or other note, or opens the dictionary on a page where the user can check the meaning of the notion and term, etc. Such way of learning supports the active learning with understanding. In this way, learners quickly move forward in learning.

The important feature of electronic dictionaries is also that they offer different services generally. Apart from the various searches are often offered possibilities to divide (reduce) the dictionary for thematic units, according to chapters and others. Frequent requirement to process the frequency occurrence of the notions and terms, additional training of a new expression, update the vocabulary, etc. In e-textbooks can be built into the feedback a possibility to modify, correct and supplement the dictionary automatically.

## 5 Software tools and environments for terminological dictionary creation

Terminological dictionaries are implemented as database systems. In a few cases for creation a glossary we used program language, program environment for application development, database environment or other suitable tools. Many of our applications are implemented in program language Delphi, which is taught at our university.

Borland Delphi system is a rapid application development environment (RAD), which is extremely popular in our country. In Delphi applications can be used standard and by ourselves implemented components.

The system supports the actual new technologies to create Internet applications, multimedia presentations, client-server database management, etc. If only the main features considered, we find that the Delphi is a powerful application development tool, which is based on Object Pascal language compiler source, component-based architecture (VCL), and database access customization options.

For didactic Internet multimedia interactive application is Java also great, easy tool to use with a complex powerful environment. For graphic interactive presentation of knowledge and animation in electronic course books we often used Flash tools and standard Java applets.

For creation of dictionaries there are various options learning management systems (LMS) and content management systems (CMS) tools. In Slovakia is very popular Moodle which offers a complex environment – LMS and CMS.

ICT concept is much simpler explanation of the accompanying video-recordings, sound recordings, animations, as well as demonstrations of help.

A wide range of different Web applications, content management systems (CMS) and implemented applications are completed. The most common of these are Drupal, Joomla and Typo3, but also exists also a number of proprietary systems.

Drupal is a basic system, which allows manage, organize, and use the content for input. In Drupal may be used the core modules or users own modules for satisfaction any

individual claim. For Drupal as a hypertext pre-processor (PHP) programming language was written. It is necessary to learn the basic level of this programming language, and use the HyperTextMarkup Language (HTML) and Cascading Style Sheets (CSS) techniques. We have very often used just Drupal for terminological dictionary creation. In many cases we have combined more resources to create applications.

## 6 Selection of headwords for a terminological dictionary

As terminological dictionary performs only an advisory function, and can have only a limited number of headwords, the selection of headwords is one of the key stages of dictionary creation. Author(s) should select the headwords very responsibly. The priority in the selection have new notions and terms which have to be acquired for active use, problematic and complicated notions and terms, terms with problematic orthography and also notions and terms anticipated for acquiring or understanding in future. The important subgroup of headwords represents reference headwords for synonymous terms and different shortened or symbolic equivalents of terms. It is not rational to include as headwords terms related to already acquired notions. **Each** selected term included as headword should occur somewhere in the text of the textbook.

The important rule, especially for languages with a possibility of bending words, is to place the headword in the basic form. Most of terms are substantives and for them nominative of singular is the basic shape. In the case of multiply nouns (plurale tantum) the nominative of plural is the basic form. Plural is acceptable also when the definition of a notion characterizes a group of entities. For verbs as headwords is the basic form their infinitive.

The imperative requirement is to preserve the standard word order of term phrases. In term phrases no arbitrary change of their elements is allowed, e.g. any arbitrary substitution of the particular part by some of its equivalents. It is not allowed to omit a part of term phrase, of course. Basic form for adjectives depends in some languages in which the category of grammatical gender exist on the gender of basic substantive. In Slovak the basic form create the endings –ý/–y for masculine (eg. *osobný počítač*), –á/–a, for feminine (eg. *informačná technológia*), and –é/–e (eg. e*lektrické pole*) for neuter.

The spelling accuracy and standard form of headwords is also the imperative requirement. This is problematic especially in neologisms and terms borrowed from foreign languages.

## 7 Definitions of notions

In addition to the above requirements also other important prerequisites must be fulfilled, in the case of definitions of notions, which explain their content, for example:
–   All definitions included in terminological dictionaries for educational purposes should be didactically transformed in so way that they correspond to age and mental maturity of learners. It is not allowed borrowing non-consistent definitions from non-educational information sources without their adaptation and organic integrating into text part of entries. Special terms and words, which are not an object of acquiring or which are not understandable for learners, must be excluded or substituted by other proper terms and words.

- Definitions must also respect the cross-curricular and interdisciplinary links.
- The hierarchically lower notions must be defined by nearest hierarchically higher notions.
- No tautological definitions are allowed.

## 8 Frequent mistakes in terminological glossaries

We can firstly illustrate frequent mistakes on the example of the Slovak textbook of informatics (1), which has been the subject our terminological analysis published in (2). At this point, we will focus only on the terminological minidictionary included in the textbook. It includes 56 headwords, from which only one (*DVD*) represents pure shortening. Many terminological shortcomings are in headwords as well as in texts of definitions. As example we can present these:
- Parallel with some headwords terms their synonyms are quoted (*bitový tok, bitrate; DATA CD, AUDIO CD, FOTO CD VIDEO CD* (in fact, they are not synonymous)*; digitalizácia, digitizing; informačný stánok, infokiosk; picture element, pixel; snímka (fáza) animácie; vyhladzovanie hrán, anti-aliasing; zásuvný modul, plug-in; zoom, priblíženie*). No of the synonymous terms has its own reference headword. As these synonyms have different starting point than headword, the user who knows only the equivalents cannot find any information about them in the dictionary.
- English terms which are not used in Slovak terminology are used as some headwords (*capture, firewire, flash disk, musical instrument digital interface, picture element, universal serial bus*). Therefore they did not satisfy the requirement of standard d language. The same is true for synonymous terms placed as part of headwords (*anti-aliasing, bitrate, digitizing, plug-in*).
- Abbreviated term forms are quoted as synonyms at headwords in several cases (*CD, IKT, MIDI, pixel, USB*), but no of them has his own reference headword.
- Some headwords (*video filter, video kodek, video signal, video súbor*) have incorrect orthographical form, what interferes with analogous terms quoted in the correct form (*infokiosk, teleprojekt, videokonferencia, videosekvencia*).
- Notions hierarchically lower are included as headwords in some cases (*multimédiá, príkazový skript, teleprojekty*), while corresponding hierarchically higher notions (*medium, skript, teleprojekt*) are absent as headwords.
- Many terms which are used in the text of the textbook, and even in text of definitions in the dictionary, are absent as headwords, e.g. *prezentácia, signál,komunikácia*. The same is true for some shortenings, e.g. *px, 3D, WebTV* etc.

Much more shortcomings are present in texts of definition in the quoted dictionary (2). We can state some of them:
- General the exposition in the third person of singular should be preferred in the text of definitions. So it is done in most of definitions in considered dictionary. The exposition in the first person of plural is used in several texts of definitions, e.g. in entries *čítačka pamäťových kariet, efektová stopa, nastavenie bielej farby, picture element,* and *prehrávač karaoke.*

- Prefixoids are written separately also in texts of some definitions (*audio nahrávky, audio signal, video signal, video súbory*). This is not the standard way for Slovak. Some other or even the same prefixoids are written in the standard way parallel (*fotoaparát, teleprojekt, videosekvencia*).
- Three terms were used substandard in texts of some definitions (*audio*, *televízor*, *video*).
- Term for global net is written in orthographic incorrect form (*internet* instead of *Internet*). In consequence is disturbed the internal link in the subject of informatics, as in parallel textbook (8) the net is written in the form *Internet,* and even in a special note is explained the difference between the expressions *internet* and *Internet*.
- Several for learner difficult words are used in texts of definitions without explaining, e.g. *aplikácia, formát, kolekcia, partitúra, scéna, transponovať*.
- Notions which are not defined are present in texts of some definitions (*kompresný pomer, textové pole, rozhranie*), and for which also headwords should be included in the dictionary.
- Some important synonymous terms have no headword and are absent as well in the texts of definitions, e.g. *binárna sústava*, *nosič, údaje* (synonyms of the terms *dvojková sústava, medium, data*).
- Notions/terms with vague content were used in the text of some definitions (*automatika, video, bod zvuku, počítačové data, živý obrázok*).

Whereas the weighted textbook has above-average level, we will quote also some typical mistakes which we have found in the dictionary (2) designed for technology teachers. Dictionary of such a designation would have an above average level, but it failed in this case. In addition to many errors analogous to those we have already mentioned also other mistakes and shortcomings are in it.

Some definitions in the dictionary are incorrect in terms of scientific truth. The notion *celziova teplota* (*Celsius temperature*) is wrongly defined as *Celziova teplotná stupnica* (*Celsius temperature scale*). For the quantity *hustota (density)* is wrongly presented its unity $kg/m^2$ instead of $kg/m^3$. The notion *fluór* is defined as a *mineral* instead as a *chemical element*. False definitions have also notions *intranet* (written wrongly as *Intranet*), *pamäť (memory)* (defined wrongly as machine for processing of information), *permitivita (permittivity)* defined wrongly, as a constant, and other. Some notions have no sense, e.g. *umelá látka, povrch látky, otáčavá rýchlosť, materiálová konštanta, ióny vedúce elektrický prúd,* and other.

The content of some notions is unduly narrowed. The notion *kanál* is narrowed to an artificial watercourse, and ignores such important notion as *televízny kanál* (TV channel). Similar situation is also in the case of headwords *fáza, heslo, komunikácia,* and other.

Many notions present in texts of definitions, but also other, would deserve inclusion as separate entries, e.g. *aplikácia* (as important notion of ICT), *grafika*, *sieťové technológie, informačné a komunikačné technológie, informačný systém, synonymum* (as a counterpart of incorporated entry *homonymum*), *zliatina, zmes.* Also many important shortenings, *e.g. IKT (ICT), LSI, PIN, VLSI,* etc. would deserve separate entries.

In texts of definitions are many incorrect terms, e.g. *plastický obal, umelé vlákno, tepelná rozťažnosť* instead of *plastový obal, syntetické vlákno*, *teplotná rozťažnosť*.

In many cases definitions included in the dictionary do not respond the fictitious question "what is it?". For example in entry *automatové ocele (free-sutting steels)* the quoted definition informs about the aim and some properties of the steels, but not what are they. Similar situation is in many other entries, e.g. *automobilový motor, elektrický istič, kontrolka, laserová tlačiareň, zvuk* and other.

In the text are many Czech terms, e.g. *čidlo, tlačítko, vodítko, výuka,* instead of instead of Slovak counterparts *snímač, tlačidlo*, *vodidlo, výučba*. There are also some Czech words, e.g. *kartáč, přidává, vada* instead of their Slovak true counterparts *kefa, pridáva, chyba*. In texts of definitions are also several terms or words which are only a non literary imitation of Czech terms or words, and represent neither standard Czech terms/ words, nor standard Slovak terms/words, e.g. *preklížka* (Czech *překlížka,* Slovak *preglejka*), *guličkové ložisko* (Czech *kuličkové ložisko,* Slovak *guľôčkové ložisko*), *východzí* (Czech *výchozí,* Slovak *východiskový*), *zosilovač* (Czech *zesilovač,* Slovak *zosilňovač*)

Almost all entries present English equivalent(s) of Slovak headword immediately after it in brackets. Some of them do not correspond to Slovak headwords, like *audiovizuálna technika (audiovisual technique)* instead of *audiovisulal equipment*, *rozmer (parameter)* instead of *dimension.* Many English equivalents are presented also in texts of definitions. Some of them are spelled incorrectly, e.g. d*esing, konstruktion, bicykle* instead of *design*, *construction*, *bicycle*. Some English terms are used or translated wrong or raggedly, e.g. term *väzba* is translated into English raggedly as *bind*, *bond*, and *link*. The important shortening *SMS* is wrongly presented as *Short Massage System* instead of *short message service* or less frequent *systems management server*. The term *kovové sklá* is wrongly translated as *metal* instead of *metallic glass* or *amorphous metals*. The terms *preklad; prekladanie* are wrongly translated as *translate, translation* instead of *translation, translate*. The term *polymetylmetakrylát* is wrongly translated as *polymeathylmetacrolein* instead of *polymethylmethacrylate.*

Some standard Slovak words are used inappropriately, or informational treacherous, e.g. o*becne, obor, odpovedajúci, poverenie, prepúšťanie, vydávajúci, vzpínanie,* instead of *všeobecne*, *odbor, zodpovedajúci, preverenie, preposielanie, vyjadrujúci, spínani.* Some Slovak words are listed in the wrong grammatical gender, eg. *klavesa* (f) instead of *kláves* (m), *rada* (f) instead of *rad* (m), *snímok* (m), instead of *snímka* (f). Also several words are present in texts which are no part of Slovak vocabulary, e.g. *precitlivosť, drtina, gulička, kľudný, zbytok.* Orthographically incorrect are written also many Slovak terms, e.g. h*andicapovaný, Joule, loggia, pakfonk, vademecum* instead of *hendikepovaný*, *joule* (basic unit of energy), *lodžia*, *pakfón*, *vademékum*.

Very much of Slovak headwords are presented in plural, but are they translated into English in singular, like *okná (window)* instead of *windows*, *oleje (oil)* instead of *oils*, *polovodiče (semoconductor)* instead of *semiconductors.*

As headwords are included many hierarchically lower notions, e.g. *digitálny integrovaný obvod, automobilový katalyzátor, zliatiny kovov,* while the hierarchically higher notions *integrovaný obvod, katalyzátor, zliatina* are absent.

The inclusion of synonymous terms in headwords is inconsistent. In some cases as the first is included the international term and the national as the second, e.g. *periodikum, periodická publikácia; plotter, súradnicový zapisovač; separát, zvláštny*

*výtlačok*. Sometimes it is vice versa, e.g. *pružný disk, disketa (floppy disk); tvrdá guma, ebonit; zápachový uzáver, sifón*.

In many cases as synonymous terms are presented or interpreted terms which correspond to different notions, e.g. *hmota* vs. *látka* vs. *material*, *izolant* vs. *isolator* vs. *dielektrikum, kvapalina* vs *tekutina*.

Some presented notions have not exact content, e.g. otáčavá rýchlosť, pochod, rýchlosť rotora, snímacia optika.

Many wrong terms are present in the text of different notions, e.g. *softwarové prehrávače, teplota, plastická hmota, prevedenie* instead of *softvérové prehrávače, termodynamická teplota, plast, vyhotovenie*.

In many cases two or more different terms rotate incorrectly as if they were equivalent, e.g. *cievka* vs *vinutie* vs *solenoid, hmota* vs *látka* vs *material, hodnosť* vs *titul*. Oft similarly alternate similar but not always fully synonymous terms, e.g. *doska* vs *doštička* vs *platňa, náuka o...* vs *veda* vs *odbor* vs *čiastkový odbor* vs *vedný odbor* vs *vedná disciplína* vs *vedecká disciplína* vs *obor.* As equivalents of the word *term* alternate words *meno, názov, obchodný názov, odborný termín, označenie, pojem, pomenovanie, medzinárodné pomenovanie, spoločné označenie, spoločný pojem, spoločný názov ,súborný názov, súhrnné označenie, súhrnné pomenovanie, súhrnný názov, synonymné pomenovanie, výraz.* Synonymous terms alternate oft chaotically in the texts of definition, e.g. *opis* vs. *popis*, *používať* vs. *užívať*, *používateľ* vs. *užívateľ*

In Slovak terminology the word order is rigid. Some terms in the dictionary have a non standard word order (*armatúry vodoinštalačné* instead of *vodoinštalačné armatúry*, *kapacita tepelná* instead of *tepelná kapacita. asynchrónny motor jednofázový* instead of *jednofázový asynchrónny motor.*

**Headwords should represent strictly only one notion**, it is also one term as a rule. It was not respected in the case of headwords *fax/modem (fax/modem), kalenie* a *nízke popúšťanie* (hardening and tempering), *preklad; prekladanie.*

Headwords should be quoted in singular as a rule. It was not respected in the case of headwords *antikorózne ocele*, *automatové ocele*, *konštrukčné ocele*, *didaktické testy*, *enzýmy*, *epoxidové živic, farbivá, komerčné siete, kompozity, pružiny,* etc.

Many errors in dictionaries are often the result of superficial corrections. So one can find many banal mistakes in the text of the dictionary, e.g. *Amperes rule, alerning, vurrent, nocveyance, dionizovaný* instead of *Ampere's rule, alerting, current, conveyance, deionizovaný.*

The same is valid for consistence of headwords. Synonymous terms are quoted raggedly, e.g. in a row, separated by commas like *adhézia, priľnavosť*, by semicolons like *digitálna knižnica; virtuálna knižnica; elektroická knižnica*, or in brackets like *elastická (pružná) deformácia*, but oft they are presented at beginning of definitions as in the case of the synonymous terms *prísada*, *rozkmit, bojler* in entries *aditívum, amplitúda, akumulačný ohrievač vody. Kmitočet* as synonym of the term *frekvencia* (frequency) is included at the end of its definition. Some synonymous terms have a duplicate definition, e.g. one in entry *prevzatie stavby, kolaudácia* and the second in separate entry *kolaudácia.* In the case of three synonymous terms *digitálna knižnica; virtuálna knižnica; elektronická knižnica* the first and the third synonym has separate headwords and definitions, but the term *virtuálna knižnica* has no separate entry with the definition

or reference headword. Also the synonym *zrub,* presented as synonym of the term *drevený dom,* has no separate entry with the definition or reference headword. In the case of headword *drevená (oceľová) konzola* (*wood/steel console*) the term element *oceľová* is no equivalent of that one *drevená*. Synonymous terms are absent at some important terms, e.g. the term *elektronické vzdelávanie* in the case of the term *e-mail*. Inconsistently are quoted also shortenings and symbols. Some of them like *AVI (Audio Video Interleaved), CD (Compact Disc), CD-RW (Compact Disc ReWritable)* are included as separate entries with definition and explanation of their etymology. Some, like *CAD* (in the entry *Auto CAD*), *MB, GB* (in the entry *bajt*) are listed and explained in texts of definitions. Some have no separate entries nor are explained in the context, eg. *CCD, CNC, DTP, PCB, STN* (as counterpart of the password *ISO*).

A lot of frequent synonymous terms is absent in the dictionary, e.g. *resumé, zhrnutie* (at the entry *abstrakt*), *prísada, prídavná látka, aditívum, ingredient, ingrediencia, prídavok* (at the entry *aditívum*). The same is valid for English equivalents of Slovak terms listed for specific headwords, e.g. for the Slovak term *diaľnica* is given only one English synonym – *speedway* and other important and more frequent equivalents *highway, motorway, freeway, superhighway* are missing (Google Translate offers eight equivalents, but not the speedway).

The texts of many definitions are not sufficiently transformed didactically. This demonstrates for example frequent use of foreign, low-understand words. Many of them should and could be replaced by Slovak words which are better understood by learners, e.g. instead of words *gradácia, karcinogénny, ideatívne myslenie, translačný, kompatibilný, entita, personálny, erudovaný, eutrofikácia* (correctly *eutrofizácia*), *exteriér, toxické, konceptuálna schéma, substrát, propelent* (correctly *propelant*), *kognitívne, konzistencia, komponenta, detonácia* would be better to use the Slovak understandable words *stupňovanie, rakovinotvorný, tvorivé myslenie, posuvný, zlúčiteľný, jednotka, osobný, vzdelaný, nadbytok živín, vonkajšie prostredie, jedovaté, pojmová schéma, podložka, hací plyn, poznávacie, súdržnosť, zložka, výbuch.*

In texts of definitions are present also some although literary, but inappropriate (*Celziový stupeň, poslucháč, snímacia optika, hrúbka materiálu*), colloquial (*audio, nulák, rádio, stereo, video*) and outdated terms (*dielektrická konštanta, silové zariadenie, silnoprúdový kábel, schodište*).

Tautological definitions are typically those where instead of a definition answering the question "what is it?" merely synonymous terms of the first term are given in the entry. As example we quote some tautological definitions present in the dictionary: "*dekadická číselná sústava (decimal numeration system) – desiatková sústava*"; "*e-mail (e-mail) – elektronická pošta*"; "*hydroelektráreň (hydroelectric energy station) – vodná elektráreň, hydrocentrála*"; „*manuálny (manual) – ručný*"; "*mobil – mobilný telefón*", it is the compete entry are created by synonyms and no other information about the content of the particular terms is present.

## 9 Conclusions and recommendations

Our experience shows that terminological dictionaries fulfil very important function in textbook, as one cannot assume that all learners remember the content and

localizations of definition of an acquired notion/term in their text. In the case of a lack of information the learner can quickly find the searched term and also definition of the notion named by the term. Therefore we recommend include a terminological glossary in each textbook. This recommendation has a sense only provided that it fulfil above quoted prerequisites and has no significant shortcomings and mistakes. One can recommend provide special terminology training as well as special terminological instruction for authors of textbook and also for users of textbooks in order to increase their terminological literacy and culture. Quoted examples of typical mistakes in terminological dictionaries suggest that currently many authors do not meet the preconditions. It also suggests that creating of a high-quality terminology dictionary is not as easy task as it seems at first sight for those who have no personal experience with creation of dictionaries of this kind.

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