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***ELECTRONIC DICTIONARY OF SPORTS METAPHORS
AS AN INSTRUMENT TO DEVELOP THE UKRAINIAN COMPUTER
LEXICOGRAPHY***

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The article partially considers the issue of Ukrainian computer lexicography, the development of which requires constant updating and application of new approaches. At the current stage, linguists, as well as experts in the field of philology and journalism, use electronic texts and Internet resources for work and analysis significantly more frequent, rather than traditional printed sources. For fast and high-quality processing of a large array of language units, it is necessary to find tools that would provide both a convenient keyword search in the database and the ability to perform professional analysis of language units «online» according to certain criteria.

The proposed study highlights the main directions of development of electronic lexicographic resources on the Internet related to work with various aspects of the Ukrainian language (word interpretation, translation, spelling, word change, etc.) and describes the main advantages and disadvantages of already created dictionaries. The functional possibilities of lexicographical sources of philological orientation available in the «online» mode are analyzed. A few sports dictionaries posted on the Internet, which are closely related to the topic of our study, are considered separately.

The authors present the experience of developing a dictionary of sports metaphors, structured in 4 categories: anthropomorphic, sociomorphic, artifact and natural morphological types, within which a system of metaphorical models is built. The dictionary is designed using the MediaWiki mechanism, the parameters of which meet the needs of users and facilitate the maintenance and administration of the site. Systematization of language units and their search on the created site provides alphabetical and categorical principles. The developed prototype of the electronic dictionary is one of the tools for teaching students of philology and journalism, a platform for conducting their own research, as well as a segment of the Ukrainian media space that can meet the probable search queries of users.

Keywords: *database, computer lexicography, MediaWiki mechanism, online dictionary.*

1. Introduction

In the period of interdisciplinary research and with the computerization of most of the processes that accompany human life, modern technologies are one of the most effective tools for ranging, organizing, and processing large amounts of information. The philological paradigm is not an exception, as applied linguistics has been actively developing lately. In some cities, including Kiev, there are computer linguistics laboratories that help to develop modern word and text handling methods. Within the field of applied linguistics, computer lexicography undoubtedly has its leading place among others sections. Nowadays, electronic directories and online dictionaries are relevant to society and much outweigh traditional paper counterparts. The development of a website which is a tool for finding commentary metaphors on several parameters with unique representation



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of examples selected from live broadcasts of different sports, will become a qualitatively new source both thematically and functionally in modern Ukrainian computer lexicography.

Our aim is to present the experience of developing an electronic dictionary for the placement of sports metaphors recorded from speech of Ukrainian-speaking commentators, which has no analogues currently available. We believe that this resource will be in high demand, as the sports sector in Ukraine is developed and popular. Not only journalists, philologists and media linguists will be interested in this content, but also a wide audience of spectators and fans.

2. Literature Review and Problem Statement

From the experience of Ukrainian lexicography, we affirm that paper media, especially those which reflecting the processes of neologization, foreign language borrowing or the specifics of verbal speech, sometimes do not keep up with the changes in the dynamic lexical system, because at the time of publishing such edition some information may be outdated or need to be refined. Apart from this, the demand for such lexicographic products is unfortunately not too high. Instead, the electronic dictionary can be created on a free platform that allows you to edit and supplement your work in real time, as well as reach a much wider range of users through accessibility and mobility. Comparable parameters show an undoubted benefit of the next generation of dictionaries, which becomes the reason of interaction of philologists and software developers.

“Online dictionaries are considered to be electronic resources available on the Internet that contain a specific user interface (search capabilities, hyperlinks, etc.) and automated database interaction at the software level” [16, p.47].

German scientists Wolfgang Klein and Alexander Geyken give a number of advantages of computer dictionaries, which include modularity, additional functionality, cumulative development and multitude of methods. Modularity, according to researchers, includes modules of pronunciation, morphology, syntax, semantics and etymology [17, p.84]. The electronic dictionary of sports metaphors we have developed at this time involves the use of only a module of semantics, since the purpose of the created resource is to illuminate the metaphorical meaning of the word in a sports context. However, a promising area is also a module of morphology, which will be useful not only to sports fans, but to professional journalists and philologists, as well as students of these specialties, to determine the frequency of use of a certain part of the language as a metaphor and their ability to create new meanings.

The Ukrainian researcher E. Kupriyanov mentioned that “the electronic dictionaries are proposed to be classified both by conventional parameters”:

- 1) vocabulary (general-purpose or special-purpose dictionaries);
- 2) number of languages (monolingual, bilingual and multilingual dictionaries);
- 3) destination (translation, explanatory dictionaries etc. or complex dictionaries);
- 4) adherence to language norms: (dictionaries of literary or spoken language) [14].

The lexicographer from Kharkov evoke another classification of electronic dictionaries, highlighting the following 4 types:

- 1) linguistic (textual and hypertextual dictionaries, with hypertext linking the entries and outer language resources, such as Wikipedia, Lingvo.pro etc.);
- 2) dichotomy “paper dictionary – electronic dictionary” (based on a paper dictionary and newly developed);
- 3) availability of terms used in one or several areas in case of terminology dictionaries (dictionaries containing terms to be used in a single or several areas);
- 4) information form: textual dictionaries, audio dictionaries and video dictionaries” [14].

In our case, it is about the development special-purpose, monolingual dictionaries, dictionaries of spoken language, hypertextual dictionaries and dictionaries that correlate dichotomy “paper dictionary – electronic dictionary”, since the basis for filling the resource is a classic short dictionary compiled by the authors as a result of the commentary speech analysis and part of the relevant dissertation research.

Definitely, computer lexicography has become a vital part of modern linguistics, because such methods enhance the research of modern scientists and help to create quality products of intellectual work. We agree with the opinion of Adam Kilgarriff that “as we work at and with our computers, developing new dictionaries, so we are cyborgs, collaborating with the intelligence embedded in the machine to produce an ever more intelligent product” [13, p.6].

3. Research methodology

The algorithm used to create a metaphor dictionary involved a combination of linguistic and computer science competences, which reflects the essence of applied linguistics. It is possible to distinguish 3 phases of interdisciplinary interaction when creating an electronic resource:

- electronic dictionaries analysis;
- search for the optimal platform and its application;
- structuring the lexical material and filling the site.

There are a number of electronic dictionaries in Ukrainian linguistics that provide, first and foremost, quick and convenient access to information for spelling, translation, word interpretation, etc. The table describes the features of these resources.

Table 1.

Features of resources

Resource	Functionality
“СЛОВНИК ЮА” [https://slovnyk.ua/]	Search: – by keyword; – alphabetically. Features: – word interpretation; – spelling; – decline word in cases; – appeal; – transliteration.
“Словопедія” [http://slovopedia.org.ua/]	Search: – by dictionaries list; – by keyword (comprehensive search in all dictionaries); – alphabetically (within chosen dictionary). Additional features: – forum.
Academic Explanatory Dictionary of Ukrainian in 11 volumes (online version) [http://sum.in.ua/]	Search: – by keyword; – alphabetically. Additional features: – hyperlinks to the word forming bases and words in the notes; – search in definitions; – comments on the dictionary article; – list of recent views.
Free Explanatory Dictionary. The newest online dictionary of the Ukrainian language (2013–2018) [http://sum.in.ua/f/onlajnovyj]	Search: – by keyword; – alphabetically. Additional features: – hyperlinks to the word forming bases and

	words in the notes; – search in definitions; – comments on the dictionary article; – list of recent views. *Updated and completed version of the Academic Explanatory Dictionary
Dictionary of the Ukrainian Language (B. Grinchenko) [http://hrinchenko.com/]	Search: – by keyword; – alphabetically; – by structural part (volume, page) Additional features: – forum; – feedback.
Lingea [https://www.dict.com/ua]	Search: – by keyword Additional features: – language support (34); – audio recording of pronunciation; – morphological tables; – list of recent views; – exercise simulators “Word training”
MOVA.info	Search: – by dictionary type
MOVA.info: dictionary of metaphors (M. Vingranovsky) [http://www.mova.info/metafors.aspx?poet=vingran]	Search: – hyperlink to metaphor in “tree”
Dictionary of media periphrases of XXI century [http://shron1.chtyvo.org.ua/Kozachok_Yaroslav/Slovnyk_mediinykh_peryfraziv_KhKhI_stolittia.pdf]	–

Also, electronic versions of sports-related dictionaries were analyzed, which, unlike linguistic works, have worse optionality or are a scanned copy of a classic dictionary or text file.

Table 2.

Resource functionality

Resource (Format)	Functionality
Wikipedia (Category on website)	Search: – by keyword; – by subcategory. Features: – contents; – notes; – source; – hyperlinks.

Sport.ua (Topic on website)	Search: — by keyword
Russian-Ukrainian dictionary of sports terms (PDF scanned copy)	—
Glossary for physical culture and sports (PDF)	—
Glossary of sports games (PDF)	—

As we can see, Ukrainian computer lexicography as the part of linguistic dictionaries is at a better stage of development, since the Internet has a number of different types of resources. We trace the opposite situation with special and narrow-themed dictionaries which electronic versions are not vastly developed yet. Almost all of the analyzed sports dictionaries that are available online do not constitute an electronic dictionary, but appear only as a digitized version of the classic (paper) dictionary. Therefore, the creation of an electronic dictionary of sports metaphors is relevant and necessary, as this online resource will become a qualitative new source both thematically and functionally.

An important step in the preparation of the electronic dictionary was the selection of an engine that would optimally provide filling, editing of the developed resource and would be convenient to use. The table shows the features of the analyzed engines with their advantages and disadvantages.

Table 3.

Feature Resources

Engines	DokuWiki	MediaWiki	Foswiki	Drupal Wiki
Open Source	+	+	+	-
Licence	GPL 2	GPL	GPL	GPL2+
Programming language	PHP	PHP	Perl	PHP
Data storage	Text files	Database	Text files, RCS	Database
Target audience	Private usage, small and medium-sized companies	Private usage, educational institutions	Private usage, Intranet, Extranet, educational institutions	Enterprise
Supported OSes	Linux, UNIX, Windows, MacOS X	Linux, UNIX, Windows, MacOS X	Linux, Windows, MacOS X	Linux, UNIX, Windows, MacOS X
Web Server	Apache, IIS, Lighttpd, PHP oriented	PHP oriented	Apache, Lighttpd, Nginx, (F)CGI oriented	Apache, Nginx, Lighttpd, IIS

Authentication tools	Text files, LDAP, MySQL, PostgreSQL, Active Directory	Almost all	Inner authorization; Apache supported tools: LDAP, NIS, Active Directory, Kerberos	Active Directory, LDAP, OpenID, OAuth, MySQL, PostgreSQL, .htaccess, Kerberos, NTLM
Host lock for editing	Plug-in	+	Plug-in	+
Blacklist	Optional	+	Plug-in	+
Supported languages	55	140	22	2

Therefore, according to the list of required features of the system, the functionality of MediaWiki engine has the advantage of storing data and quality of security to ensure data integrity. Also, having a cross-platform ability and free access to the source code of the system, which allows to customize the system for our own needs, extend its functionality and to place the system on the servers of higher education institutions. User-friendly interface, multi-language support and user management make it easy to manage roles and maintain content and system quickly and efficiently.

4. Results

The online dictionary functions the way A. Klyuyko mentioned: “Since the system has users of different roles as an administrator, a regular user and an authorized user, the system must have an authorization system. Each user has certain permissions to the system”.

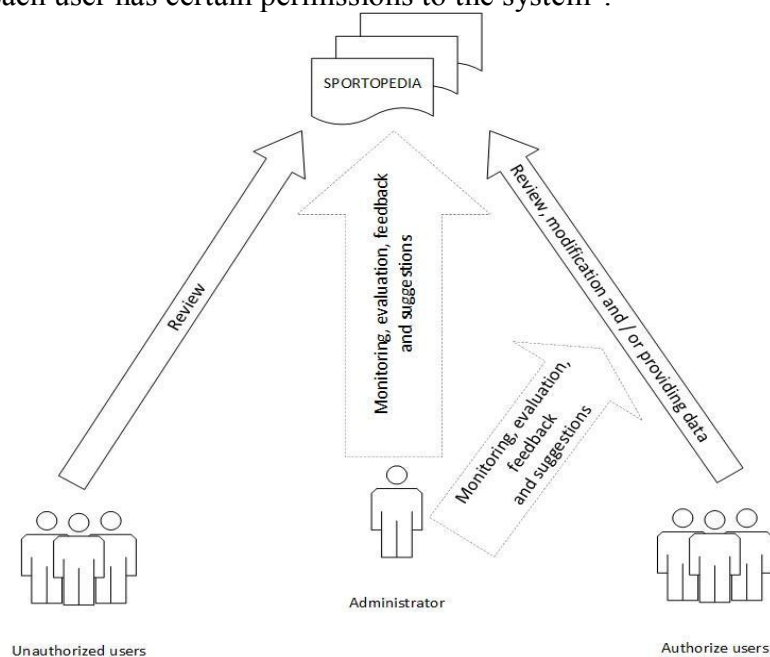


Fig. 1. Interaction of subjects and system

The last step was to organize the database, represented by verbal content, to fill the electronic dictionary. Structurally, the website has 4 categories according to the topic of donors-sources of metaphorical transference.

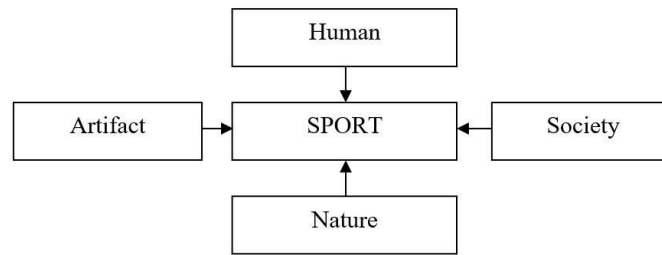


Fig. 2. Categories

Within each category, presented metaphors are arranged alphabetically. The body of necessary vocabulary was made up of sports commentary expressions, the structure of which is a metaphor. All illustrative material is recorded from archival and current live broadcasts from 1991 up to 2019. The chosen engine satisfies the need for the processing of all necessary information elements.

The dictionary article includes a metaphor, its definition acquired in sports discourse, and an example of such usage.

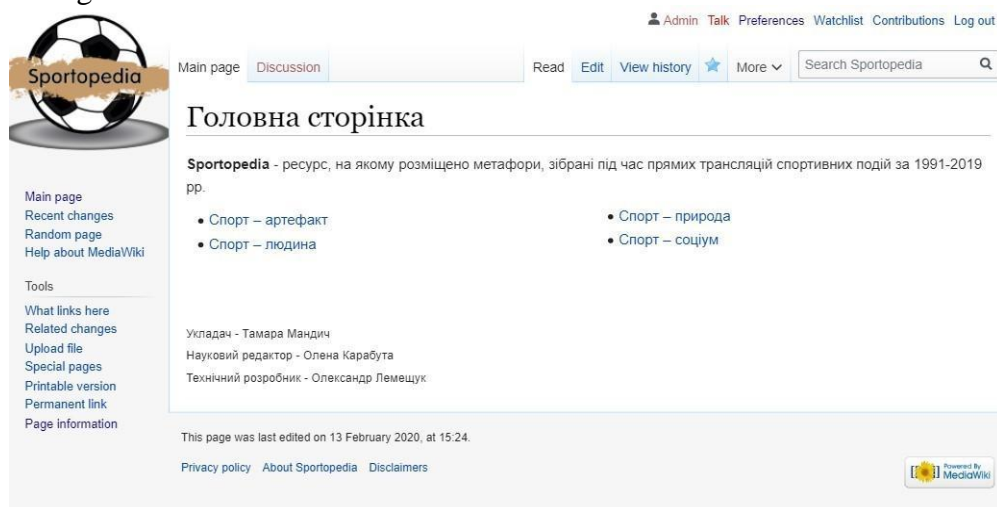


Fig. 3. Website main page

In addition, the user can find in the dictionary article one of the abbreviations, indicating that the codified lexeme belongs to a particular metaphorical model within one of the categories. The attempt to create hyperlinks to abbreviations revealed a drawback, since in this case the reference to the metaphorical model should also be indicated as a category, which contradicts the information hierarchy: metaphorical models cannot be in line with 4 thematic categories because they are subordinated and structure these categories. Moreover, the metaphorical model itself implies a finer distribution into frames and slots that detail semantics, but such classification on the test website has not yet been applied, but it is required if there is a filling of significant quantity of the dictionary and it is one of the following resource editing operations. However, the presence of inactive conditional abbreviations allows us to define a narrower lexical meaning and to trace the mechanism of semantic improvement that causes the appearance of a metaphorical linguistic agent in spontaneous commentary speech. At the end of each quote, there is a link to the source, which is the name and date of the live sports broadcast, as well as a television or online channel that broadcasted it.

Testing of the created resource allowed to distinguish advantages and disadvantages of the created site. The benefits include:

- 1) the ability to search for a metaphor for one of 3 parameters: a keyword, a category, and an alphabet within a category;
- 2) the ability for users to make changes that are approved or rejected by the administrator. This option helps to improve the electronic dictionary, to fill it faster;

- 3) linking to dictionary articles: hyperlinking to a word within one dictionary article makes it possible to mark antonymous or synonymous relations with the lexems of another dictionary article, and switching to a lexem from this series will make it easier to find the opposite or similar meaning;
- 4) MediaWiki is served by the Nginx HTTP server installed on the Linux Ubuntu 18.04 LTS operating system. The server does not redirect the client, but sends a request and returns the received response back to the client.

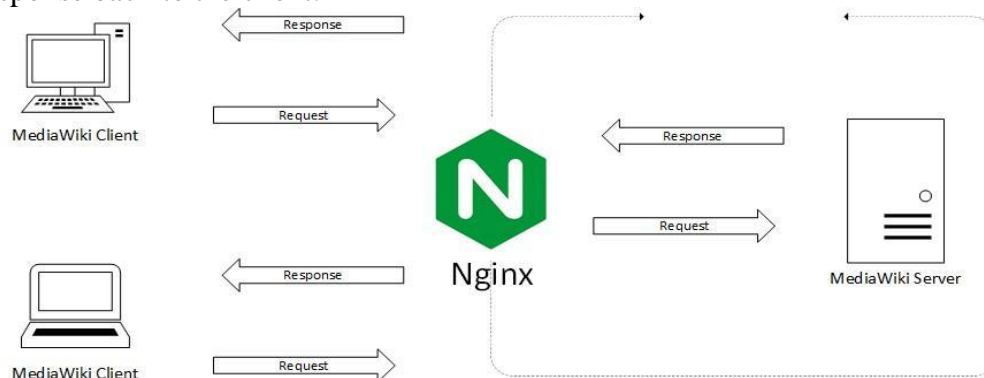


Fig. 4. Server interaction

Developed electronic dictionary has a number of advantages and capabilities over its classic counterpart.

The disadvantages are:

1. The first version of the General Public License is used.
2. MediaWiki can only be installed on PHP oriented servers.

5. Conclusion

The electronic dictionary of sports metaphors is an instrument of development of Ukrainian computer lexicography. The proposed test version of the electronic dictionary of sports metaphors will help to supplement the achievements of computer vocabulary and to promote one of the aspects of modern Ukrainian language on the Internet. Further work involves the following actions:

- 1) replenishment of the resource up to 1000 lexical units, which processing will be greatly facilitated by methods and tools of applied linguistics;
- 2) implementation of frame-slot classification;
- 3) the usage of not only a semantic but also a morphological module, which will be important for students and professional researchers of the language of mass communication.

The described experience will further allow to make the structure and functionality of such resources more sophisticated, using an even larger set of search capabilities and analytical parameters of lexical material.

REFERENCES

1. An academic explanatory Dictionary of the Ukrainian Language in 11 volumes, <http://sum.in.ua/>
2. Dictionary of the Ukrainian language, edited by B. Grinchenko/ Retrieved from: <http://hrinchenko.com/>
3. Lingea. Retrieved from: <https://www.dict.com>
4. MOVA info. Retrieved from: <http://www.mova.info/>
5. Sport.ua. Retrieved from: <https://sport.ua/uk/sport-wiki>
6. The newest online dictionary of the Ukrainian language (2013–2018). Retrieved from: <http://sum.in.ua/f/>.
7. Dictionary of XXI Century Media Peripherals. In: Kozachok, Ya., Vasylychenko, V., Merzliuk, Yu., Kostiuk, I. and Kravchenko, S. (eds.). Kyiv, National Aviation University (2014). Retrieved from: http://shron1.chtyvo.org.ua/Kozachok_Yaroslav/Slovyk_mediinykh_peryfraziv_KhKhI_stolittia.pdf
8. Slovyk UA. Retrieved from: <https://www.slovyk.ua/>

9. Wikipedia. Category: Sports terminology. Retrieved from: https://en.wikipedia.org/wiki/Category:Sports_terminology
10. Tsap, I. H., Tsap, M. I. (2013). Glossary of sports games Ivano-Frankivsk, NAIR.
11. Terminology dictionary for physical culture and sports. In: Hryban, H. P., Boyko, D. V., Dzenzeliuk, D.O. (Eds.) (2016). Zhytomyr: "Ruta"
12. Kryshchalskyi, O. P. Association (1986). Russian-Ukrainian dictionary of sports terms. Lviv, Lviv Organization of the Ukrainian Sports.
13. Kilgarriff, A. (2003). What computers can and cannot do for lexicography or Us precision, them recall. Keynote lecture. In: Proceedings of ASIALEX 2003, August. Tokyo. Retrieved from: <https://www.kilgarriff.co.uk/Publications/2003-K-AsialexKeynote.doc>
14. Kuprijanov, E. (2015). Electronic dictionary classification as problem of modern computer lexicography. *The Journal of V. N. Karazin Kharkiv National University Series. "Philology"*, 72 (1152), 46–49. Retrieved from: <https://periodicals.karazin.ua/philology/article/download/3795/3362/>
15. Pryimak, D. (2018). Developed English-Ukrainian online dictionaries: current status and prospects. *Inozemna Philologia 131*, 46–59.
16. Klein, W., Geyken, A.: Das Digitale Wörterbuch der Deutschen Sprache. Retrieved from: https://pure.mpg.de/rest/items/item_1076569_2/component/file_1076568/content.
17. Computer Linguistics Laboratory. Retrieved from: <http://linguist.univ.kiev.ua>

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ЕЛЕКТРОННИЙ СЛОВНИК СПОРТИВНИХ МЕТАФОР ЯК ІНСТРУМЕНТ РОЗВИТКУ УКРАЇНСЬКОЇ КОМП'ЮТЕРНОЇ ЛЕКСИКОГРАФІЇ

У статті частково розглядається питання української комп'ютерної лексикографії, розвиток якої вимагає постійного оновлення та застосування нових підходів. На сучасному етапі студенти-лінгвісти, а також експерти в галузі філології та журналістики, набагато частіше почали використовувати для роботи та аналізу електронні тексти та Інтернет-ресурси, а не традиційні друковані джерела. Для швидкої та якісної обробки великого масиву мовних одиниць необхідно знайти інструменти, які б забезпечували як зручний пошук ключового слова у базі даних, так і можливість виконувати професійний аналіз мовних одиниць у режимі "онлайн" за визначеними критеріями.

Запропоноване дослідження висвітлює основні напрями розвитку електронних лексикографічних ресурсів у мережі Інтернет, що стосуються роботи з різними аспектами української мови (тлумачення слова, переклад, правопис, словозміна тощо) та описує основні переваги і недоліки вже створених словників. Проаналізовано функційні можливості доступних у режимі "онлайн" лексикографічних джерел філологічного спрямування. Окремо розглянуто нечисленні словники спортивної тематики, розміщені в мережі Інтернет, що тісно пов'язані з темою нашого дослідження.

Автори представляють досвід розробки словника спортивних метафор, структурованого за 4 категоріями: антропоморфним, соціоморфним, артефактним і природоморфним типами, у межах яких побудовано систему метафоричних моделей. Словник розроблено з використанням механізму MediaWiki, параметри якого задовольняють потреби користувачів та полегшують обслуговування й адміністрування сайту. Систематизація мовних одиниць та їх пошук на створеному сайті передбачає алфавітний та категорійний принципи. Розроблений прототип електронного словника є одним із інструментів навчання студентів-філологів та студентів-журналістів, платформою для проведення власних досліджень, а також сегментом українського медіапростору, який зможе відповідати ймовірним пошуковим запитам користувачів.

Ключові слова: база даних, комп'ютерна лексикографія, механізм MediaWiki, онлайн-словник.