

# The Use of Lexicographic Resources in Croatian Primary and Secondary Education

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## Abstract

This paper presents the findings of an online survey on the use of dictionaries and other lexicographic resources in primary and secondary education in Croatia. Apart from asking teachers to answer questions regarding the frequency of their use of lexicographic resources in classroom and while preparing for classes, the survey also elicited teachers' satisfaction with the dictionaries' content and structure. The survey was conducted at the national level among teachers of different educational backgrounds between 1 February to 15 February 2023. It was completed by 503 respondents. The results provide important statistical data on the usage of dictionaries in Croatian education and the usefulness of lexicographic resources in contemporary teaching practices. Respondents were generally satisfied with the available resources but often combined different resources to find the information they needed. Major shortcomings highlighted in the survey include the lack of resources suitable for students at lower levels of education, outdated or incomplete resources, and substantive and formal deficiencies in the content and form of resources.

**Keywords:** dictionary usage; education; user needs; survey.

## 1. Introduction

Dictionary usage has been a well-researched topic in lexicography over the past several decades, with empirical studies gradually shifting their focus towards the analysis of digital dictionary usage, specifically online dictionaries (Müller-Spitzer, 2014). While the general purpose of investigating dictionary usage could be described as determining “in which situations, how and, with which degree of success, etc., lexicographic tools are used” (Müller-Spitzer, Koplénig & Wolfer, 2017: 715), most such studies have primarily concentrated on students and language professionals (Lew, 2015: 234) as the most prominent users of lexicographic resources. Only recently have large-scale surveys on dictionary use among the general public started to emerge, such as the study by Kosem et al. (2019) that included the most participants in an overall study in different European countries.

Research on the use of dictionaries in the context of education has predominantly focused on their role as reference tools and teaching aids in foreign language learning (e.g. Boulton & De Cock, 2017; Tono, 2001), with some exceptions emphasizing their contribution to enhancing literacy and reading skills (e.g. Beech, 2010). Large-scale studies, like the one conducted by Kosem et al. on the use of monolingual dictionaries

(2019), have naturally included teachers as a subgroup of language professionals. However, there have been no specific studies exploring how teachers use dictionaries and other lexicographic resources as teaching aids and during the preparation of teaching materials. Therefore, the research presented in this paper was designed to investigate how dictionaries and other lexicographic and specialized resources, such as encyclopaedias, specialized dictionaries and databases, glossaries, etc., are used by Croatian primary and secondary school teachers.

An online survey was conducted to examine the extent to which teachers of various subjects use dictionaries and other resources when preparing teaching and learning materials for their classes, as well as their use in the classroom. In addition to assessing the frequency of lexicographic resource usage in the classroom and during lesson preparation, the survey also aimed to gauge teachers' satisfaction with the content and structure of dictionaries. The results of the survey offer valuable statistical data regarding dictionary usage in Croatian education and shed light on the usability of lexicographic resources in contemporary teaching practices. However, the qualitative analysis of several open-ended questions proved to be more significant in assessing the actual role of dictionaries in the educational process, and even more so for the discussion of the future development of dictionaries and other educational resources that better meet the needs of teachers and students in the classroom.

The remainder of the paper is structured as follows: previous studies on dictionary usage in education are briefly presented in the next section. Section 3 explains the design and implementation of the current survey in detail. Section 4 presents and analyses the results of the survey. Finally, in section 5, we reflect on the findings and propose potential future studies.<sup>1</sup>

## 2. Background

Pedagogical lexicography has always been a highly active line of lexicography research and practice, which is rather expected given the application of dictionaries as reference tools in education systems, particularly in foreign language teaching. However, dictionaries have gradually lost their prominent position in foreign languages curricula in primary and secondary education, sliding into the background of teaching aids and materials due to a shift away from the translation-oriented methods towards communicative strategies that rely more on language acquisition in modelled surroundings and less on explicit vocabulary instruction. Nevertheless, dictionaries have somewhat regained their role in foreign language teaching with the introduction of the Common European Framework of Reference for Languages (CEFR) (Council of Europe, 2001), which emphasizes the need for using different strategies to enhance language

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<sup>1</sup> The English translation of the survey questions is given in Appendix 1. The entire survey dataset is available on Zenodo, <https://zenodo.org/record/7975264> (Ostroški et al., 2023).

awareness and develop language competence.

Foreign language teaching has contributed to many empirical studies of dictionary usage as well. Nied Curcio (2022: 73) reports on over 250 empirical studies focusing on dictionary usage in the field of foreign language teaching. However, far less studies have been designed to address the use of dictionaries in first language (L1) teaching, particularly in primary education (e.g. Zerdeli, 2021 among the more recent ones), despite the competence in dictionary skills remains to be recognized by many European curricula (Vicente, 2022), in L1 and L2 alike. Children's dictionaries not only contribute to vocabulary learning but also facilitate encyclopaedic and cultural learning, assisting school children in acquiring general knowledge as a foundation for vocabulary development (Tarp & Gows, 2012). Therefore, explicit instruction in dictionary skills proves to be an effective strategy in improving reference skills (Lew & Galas, 2008) needed not only for a variety of language learning and language acquisition tasks, but also for overall cognitive development.

The national curriculum for the Croatian language as L1 (MZO, 2018) includes the active use of a children's dictionary as a learning outcome for students as early as the first grade of primary education: "The student searches for unfamiliar words in a children's dictionary, using the alphabetical order of words, and reads the definition of each word to understand what it means" (MZO, 2018: 12, translation by authors). In the second grade, students should be able to search for explanations of unfamiliar words in a children's dictionary and use them as part of their active vocabulary. In the fourth grade, they need to be able to explain unfamiliar words by using children's dictionaries, as well as distinguish between children's dictionaries, encyclopaedias, and lexicons. In the seventh grade of primary school, students should explain the meaning of unfamiliar words after listening to a text and by using dictionaries. Dictionary skills are explicitly required in the first and final grades of secondary school. Apart from being able to explain unfamiliar words, 15-year-olds should be able to analyse the lexical-semantic relations between words using dictionaries. In addition to being able to explain unfamiliar words, 15-year-olds should be able to analyse the relations between words using dictionaries. They are also explicitly taught lexicography, and therefore, they need to be able to describe the structure of dictionary entries, as well as use dictionaries to develop their vocabulary.

### **3. The Structure and Implementation of the Survey**

#### **3.1 General aims and principles**

The general aim of the survey was to investigate the usage of dictionaries by teachers and students in primary and secondary education in Croatia. The survey was designed based on three key research questions:

1. To what extent do teachers incorporate lexicographic resources in their teaching practices, both during class preparation and in the classroom?
2. How do teachers perceive the relevance and accuracy of information provided by lexicographic resources in relation to the curriculum they are teaching? In other words, how satisfied are they with the existing dictionaries and other reference resources they use?
3. How familiar are teachers with specialized dictionaries, databases, and other lexicographic resources?

To ensure maximum participation, various channels were utilized to disseminate the survey. These included mailing lists, social networks (such as teachers' Facebook groups, institutional and personal Facebook, Twitter, LinkedIn, and Instagram profiles), group and individual emails, and personal contacts. Additionally, in order to ensure that the data is representative in terms of participants' age, experience and place of employment, the survey was also distributed to a random selection of primary and secondary schools in Croatia by sending emails to the school principals, whose contact information is publicly available on the website of the Ministry of Science and Education (MZO).

### 3.2 Structure and implementation

The survey was conducted as an anonymous online questionnaire using Google Forms<sup>2</sup>. It comprised of 24 questions divided into four sections: 1) Personal information, 2) Workplace information, 3) Use of dictionaries when preparing classes, and 4) Use of dictionaries in class. The section on personal information collected data on gender, age, place of birth, and place of employment, while the workplace information section requested participants to indicate their university degree, current occupation (e.g. teacher of Croatian, teacher of biology, librarian, etc.), current place of employment (primary or secondary education institution), years of employment, and overall job satisfaction. In sections 3) and 4), it was explicitly stated that *lexicographic resources* refer to “dictionaries, encyclopaedias, terminological databases, and other specialized resources (in Croatian and foreign languages).” The survey included various question formats, including multiple choice questions as well as short and long open-ended questions. All questions were mandatory.

Prior to the full survey, a pilot survey was conducted with a sample of 20 participants. Based on their feedback, certain questions were modified, and new questions were introduced. The survey was open from 1 February to 17 February 2023. While the time frame may appear short for a nationwide study, previous experiences with similar studies have shown that the majority of responses to online surveys distributed via

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<sup>2</sup> [www.google.com/forms/about/](http://www.google.com/forms/about/) (12 April 2023).

email are typically received in the first few days after the invitations are sent<sup>3</sup>. We therefore expected the same to hold for invitations posted in closed groups on social networks or sent directly through personal contact, in which cases responses are typically received promptly upon the survey distribution (Saleh & Bista, 2017).

## 4. Results

### 4.1 Respondents’ background

The survey was completed by 503 respondents. Among them, 448 respondents (89.1%) identified as female, while 53 (10.5%) identified as male. One participant chose not to answer, and another selected the ‘Other’ option, which was provided for participants not wishing to identify with a binary gender category. The majority of respondents (333 or 66.2%) fell into the age range of 35 to 54 years old. Figure 2 illustrates the distribution of respondents across six age ranges: 5 (1%) participants were under 25, 80 (15.9%) were in the 25–34 group, 183 (36.4%) in the 35–44 group, 150 (29.8%) in 45–54, 83 (16.5%) in 55–64, and 2 (0.4%) participants were over 65 years old.



Figure 1: Years of teaching experience.

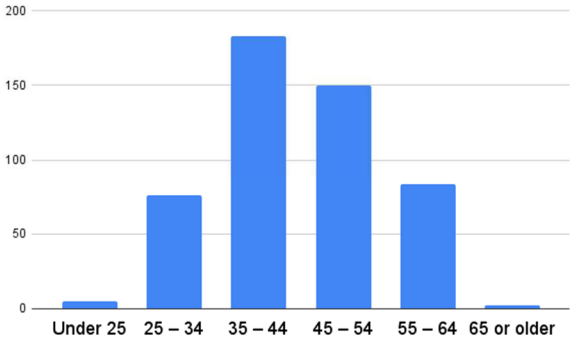


Figure 2: The age of respondents.

The survey successfully reached schools and teachers across all regions of Croatia, as indicated by the diverse range of workplaces reported by the participants. It is worth noting that two responses were received from teachers teaching the Croatian language outside of Croatia, specifically in Pécs, Hungary, and Stuttgart, Germany. Given the last population distribution of Croatia with the majority of its inhabitants living in major cities (Zagreb, Split, Rijeka and Osijek), one would expect that most participants are from Zagreb. However, the capital covers only 28.9% of all participants, while the

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<sup>3</sup> This is verified in the information available at [www.surveymonkey.com/curiosity/time-to-respond](http://www.surveymonkey.com/curiosity/time-to-respond) (12 April 2023).

remaining participants are evenly distributed among smaller towns (such as Bjelovar, Beli Manastir, Dubrovnik, Đakovo, Imotski, Karlovac, Križevci, Makarska, Našice, Varaždin, Zadar, Županja) as well as villages (such as Biškupci, Ilača, Kraljevec na Sutli, Magadenovac, Retkovci, Velika, Vrginmost). This distribution indicates a good geographical coverage, as depicted in Figure 3.

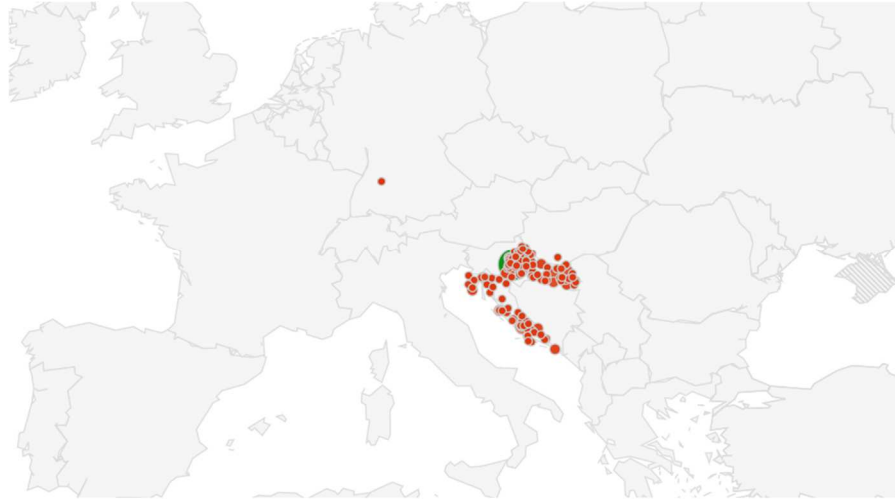


Figure 3: Regional distribution of respondents.

All respondents were equally distributed between primary and secondary schools as their places of occupation: 239 (47.5%) work in a primary school, 253 (50.3%) in a secondary school, while the remaining 11 respondents (2.2%) provided other responses, such as working in both primary and secondary schools, a music school, or a foreign language school. The question about years of experience in education shows a correlation with the respondents' expressed age. As depicted in Figure 1, the largest number of respondents, 92 (18.3%), have 20 to 25 years of experience working in schools. 80 (15.5%) respondents have worked for 10 to 15 years, 76 (15.1%) for 5 to 10 years, 73 (14.5%) for 15 to 20 years, 69 (13.7%) for less than 5 years, 61 (12.1%) for 25 to 30 years, and 54 respondents (10.7%) have worked for over 30 years in education. These figures indicate that the respondents are generally experienced teachers, whose responses should be considered as a result of relevant dictionary use.

The majority of all participants are mostly satisfied (299 or 59.4%) or fully satisfied with their workplace (118 or 23.5%). The remaining respondents indicated varying levels of satisfaction: 68 (13.5%) are satisfied to a certain extent, 13 (2.6%) mostly not satisfied, and only 5 (1%) not satisfied at all. This question was included to ensure that respondents' dissatisfaction with their workplace did not significantly influence their responses concerning the preparation for teaching. As is evident from the responses to this question, this was not the case.

The final information about the respondents' background concerns their teaching

position, and the results were positively surprising. Despite emphasizing in the invitations and survey information that the survey was intended for teachers of all school subjects, we had expected that language experts or teachers of L1 and L2 languages would constitute the predominant groups in the survey. We had also anticipated that primary school teachers, specifically those teaching grades 1 to 4 (usually ages 7 to 11), would form another significant group of respondents. This group is particularly interesting as they teach not only Croatian as L1 but also subjects such as Math, Science, Art, and Music. Figure 4 demonstrates that the survey successfully attracted teachers from all school subjects, including a substantial number of vocational subject teachers.

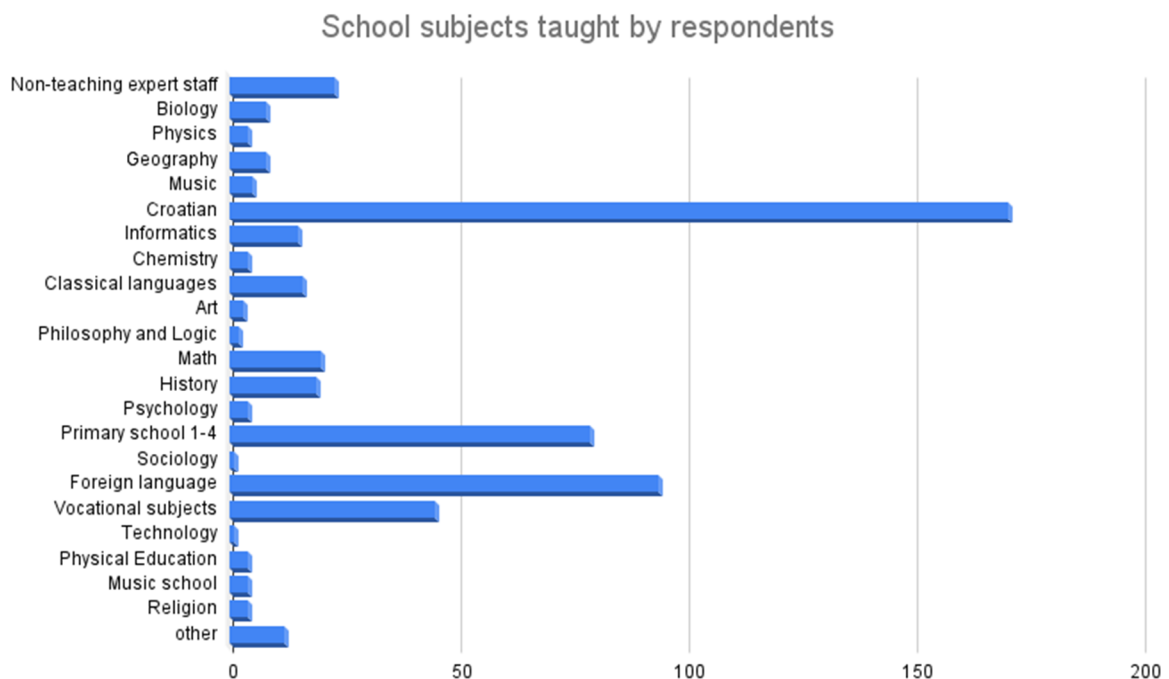


Figure 4: School subjects represented in the survey.

## 4.2 Using dictionaries when preparing teaching and learning material

Section 3 of the survey gathered questions related to the use of dictionaries when preparing classes. The first five questions focused on the use of general language dictionaries, both in printed and online formats, as well as language portals in Croatian and other languages. The subsequent questions addressed the use of specialized dictionaries, including those specific to particular subject fields, databases, glossaries, and other online resources in Croatian and other languages. Examples of such resources included the *Croatian Encyclopedia*, *Wikipedia*, *Britannica*, *IATE*, *Struna*, *Medical dictionary*, among others. Participants were given the option to provide their own responses if they were not satisfied with the provided options for frequency of usage.

Among the most common responses, 288 respondents (57.3%) indicated that they use

contemporary Croatian monolingual dictionaries once a month or more frequently. 110 respondents (21.9%) stated that they refer to these dictionaries once or twice over the course of several months. Additionally, 51 respondents (10.1%) reported using dictionaries about once a year. On the other hand, 37 participants (7.4%) stated that they never use monolingual Croatian dictionaries. Only 7 individuals reported using them on a daily basis (3), almost every day (2), or once a week (2).

More respondents seem to reach for dictionaries of English and other foreign languages. 126 (25%) respondents use them about once a month, 118 (23.5%) once to two times a month, 133 (26.4%) about once a year, and 115 (22.9%) never use them.

In the case of specialized resources in Croatian, a considerable number of respondents, 281 (55.9%), indicated that they regularly use them, i.e. once a month or more frequently. 136 individuals (27%) reported using specialized reference tools once or twice over the period of several months. Notably, English specialized resources are more frequently consulted than their Croatian counterparts. Specifically, 129 respondents (25.6%) referred to English specialized dictionaries or databases once a month or more often, while 130 (25.8%) did so once or twice over several months. On the other hand, 129 participants (25.6%) reported using English specialized resources about once a year, and 113 (22.5%) stated that they never consult specialized dictionaries or databases in English. The use of specialized resources generally does not come as a surprise if we consider they are more likely to be utilized as reference points for exam preparation, teaching, and learning materials, compared to monolingual Croatian dictionaries.

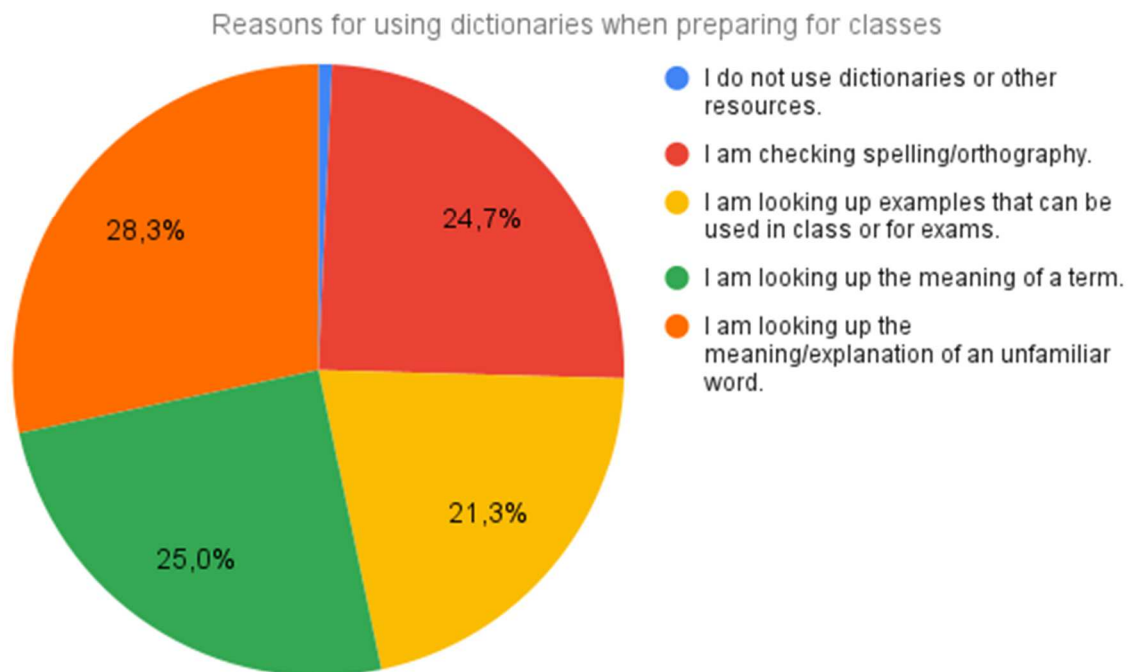


Figure 5: Most common reasons for using dictionaries when preparing for class.



The subsequent question in this section aimed to explore the reasons behind using lexicographic and other resources when preparing materials for class. Participants were provided with five pre-defined answer choices for the question *If you use dictionaries and other above-mentioned resources, what is the reason for this?* and they had the option to select multiple answers. The answer choices included: *I am looking up the meaning/explanation of an unfamiliar word*, *I am checking spelling/orthography*, *I am looking up the meaning of a term*, *I am looking up examples that can be used in class or for exams*, and *I do not use dictionaries or other resources*.

They could also add their own responses. Additionally, participants were given the opportunity to provide their own responses. Those who wrote their own reasons mentioned using lexicographic resources for checking accents, verifying grammatical features, finding lexemes related in a specific lexical-semantic relation (also using thesauri for this purpose), translation, learning word etymology, finding reliable definitions, examples of word usage in sentences, and preparing lessons where students would need to use dictionaries. Only a small number of respondents (0.7%) stated that they do not use dictionaries or other resources. The percentages of all responses are depicted in Figure 5.

Participants were asked about their opinions regarding the benefits of using dictionaries and similar resources when preparing for class, as well as their satisfaction with the structure and content of the resources they used. The responses received were predominantly positive and encouraging, e.g. *I use dictionaries to get a new idea or find a new example*, or *to clarify my dilemmas*, *to express myself more professionally in some situations*, *to quickly find examples and/or answers I need*, *to strengthen/expand my own vocabulary*; *It gives me confidence that I won't make a mistake*; *It is a reliable source of necessary information*, etc.

### **4.3 Using dictionaries in class**

Section 4 of the survey included questions about the use of dictionaries and other lexicographic resources in class, whether as reference tools or as examples during explicit teaching of lexicography or methods of dictionary use. The first two questions asked respondents about the frequency of using printed and online dictionaries and other resources in class activities, regardless of the language. 68 teachers (13.5%) use printed dictionaries often in class, while 192 (38.2%) use them occasionally. 106 (21.1%) have rarely used them, only a couple of times at all, while 128 (25.4%) have never used printed dictionaries. Although the questions were of the multiple-choice type, participants could add their own responses. Therefore, several responses provided were more comments or descriptions of teachers' teaching habits than they were responses to the question. The numbers are much more in favour of online resources. 162 (32.2%) teachers often use online dictionaries, 213 (42.3%) use them occasionally, while the rest of the respondents are equally distributed into 'rarely' and 'never' options, 62 of them

(12.3%) in each.

The analysis of all responses regarding the grade levels in which dictionaries are used with students reveals an increasing trend in dictionary usage starting from the first grade of primary school. However, there is a slight decline in usage reported for the final grades, specifically the 8th grade of primary school and the 4th grade of secondary or high school, as depicted in Figure 6.

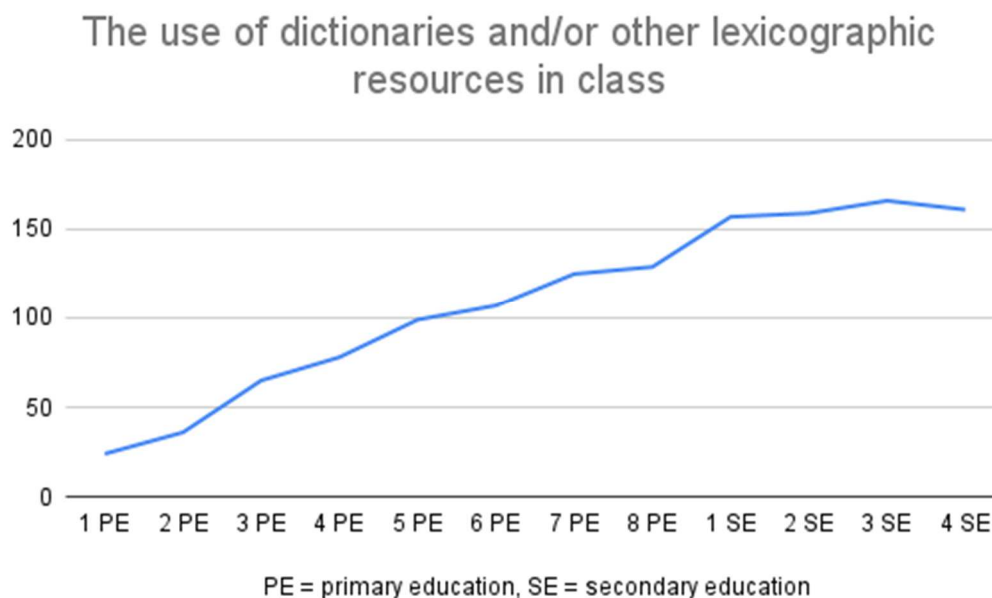


Figure 6: The use of dictionaries during class activities in primary and secondary education.

Since one of our research objectives was to assess teachers' familiarity with different types of lexicographic resources, we included an open-ended question asking them to list dictionaries or other lexicographic resources (in Croatian or other languages) they had used in class. Although this question required manual analysis, it provided valuable insights into the various reference tools employed in teaching activities. To ensure objectivity in the qualitative analysis, two of the authors initially categorized the responses based on their intuition. After thorough discussion and deliberation, they merged similar groups of responses and established a unified classification. Each response was then coded according to this agreed-upon classification. It is important to note that since a single response could encompass multiple activities, each mentioned activity within a response was treated as an individual response during coding.

The majority of respondents mentioned using at least one resource in their classes. Some responses mentioned the general type of resource (e.g. *Latin-Croatian dictionary*, various encyclopaedias, a dictionary of Croatian), while others specifically listed the resources they utilized. Both online and printed resources were well-represented among the mentioned resources. When it comes to Croatian monolingual dictionaries, there

was a preference for online resources. The *Croatian language portal* (*Hrvatski jezični portal*, [hjp.znanje.hr](http://hjp.znanje.hr)) was the most frequently mentioned resource, cited by 160 teachers (31.8%). On the other hand, only three respondents mentioned *A Large Dictionary of the Croatian Standard Language* (*Veliki rječnik hrvatskoga standardnog jezika*), which is the most recent comprehensive general dictionary in Croatian. This dictionary is available in both printed form and electronically as a dictionary app that can be purchased. Respondents also reported using specialized Croatian dictionaries, both online and in printed form. These included dictionaries of foreign words, idioms, synonyms, jargon, personal names, eponyms, dialect dictionaries, and differential dictionaries of Croatian and Serbian.

The list of dictionaries for languages other than Croatian includes various printed and online dictionaries. Among online resources, the respondents most frequently mentioned English online dictionaries (*Oxford, Cambridge, Merriam-Webster, Collins, Macmillan*), as well as online resources, such as [thesaurus.com](http://thesaurus.com), [synonym.com](http://synonym.com), [www.freecollocation.com](http://www.freecollocation.com), [acronyms.thefreedictionary.com](http://acronyms.thefreedictionary.com). Several participants also mentioned the German online dictionary *Duden*. Multilingual lexical databases such as *Wiktionary, Glosbe, the Free Dictionary, Larousse, EUdict, Crodict* (Croatian-German and Croatian-English dictionary), and *DrDicty* (English-Croatian, German-Croatian, and Spanish-Croatian dictionary) were also used. However, many respondents also mentioned using printed dictionaries. Some respondents indicated using dictionaries available in the classroom or resources found in the school library.

Among specialized resources, the *Croatian Encyclopedia* (hr. *Hrvatska enciklopedija*, [enciklopedija.hr](http://enciklopedija.hr)) was used most frequently, indicated by 65 (12.9%) respondents. It is available both online and in print, and some respondents referred to the online version, while a few mentioned using both versions. Other Croatian online resources were also mentioned, along with numerous resources (encyclopaedias, lexicons, and specialized dictionaries) that exist only in printed form. Resources in other languages included a few online encyclopaedias, primarily *Wikipedia* (including articles in Croatian), and *Encyclopaedia Britannica*.

In addition to dictionaries and encyclopaedic resources, the respondents have used other sources of information about language use and tools that facilitate language production. They primarily consulted online resources published by the Institute of Croatian Language and Linguistics, such as an orthography manual ([pravopis.hr](http://pravopis.hr)), a grammar overview ([gramatika.hr](http://gramatika.hr)), a database of Croatian equivalents to common English neologisms ([bolje.hr](http://bolje.hr)), a collection of language-related advice ([jezicni-savjetnik.hr](http://jezicni-savjetnik.hr)), and a database of collocations ([ihjj.hr/kolokacije](http://ihjj.hr/kolokacije)). Furthermore, they also consulted various portals and blogs providing answers to language-related questions, and they used online tools for proofreading ([Ispravi.me](http://Ispravi.me)), translating (Google translate, Reverso), and generating lists of synonyms from corpora ([Kontekst.io](http://Kontekst.io)). Some responses indicated that teachers use any available resources and tools they can find on the internet.

Another open-ended question was closely related to the previous one and focused on the active participation of students in class. The responses to this question were also coded using the same procedure as the previous question. Table 1 presents the types of teaching activities used for practicing dictionary skills in the classroom.

<b>Type of activity</b>	<b>Number of responses</b>
looking up unknown words / definitions of words / comparing the meaning of words	158
looking up concepts / definitions of concepts	59
learning about the structure of lexicographical entry; forming a dictionary definition	44
searching for examples of usage	24
looking up grammatical categories, morphological features of words	24
checking spelling/orthography	24
searching for synonyms	17
assistance when writing essays and other assignments	15
searching for definition/explanation of terms	10
looking up foreign words; translation; Croatian word for a foreign equivalent	10
using new words in a text or in speech	9
looking up etymology of words	7
looking up meaning/explanations of phrasemes; collocations	7
searching for antonyms	6
reading for vocabulary enrichment	3
looking up accents and pronunciation	2
defining loanwords	2
looking up abbreviations	1
looking up archaic words	1
learning how to summarize and take notes	1
they did not participate	135
general positive reply	70
other (e.g. practicing language skills)	11
vague reply	11

Table 1: Teaching and learning activities for which students actively used dictionaries.

Responses coded as *general positive reply* (N = 70) refer to responses in which teachers didn't provide specific examples of active participation, e.g. *they participated by searching the dictionaries using their smartphones, we look up into dictionaries together, they look up information, they were active looking up words, I bring dictionaries in class*, etc. Responses coded as *vague reply* (N = 11) included statements such as *I encourage them to use them, they react in a positive manner, positive impressions, students are instructed to use them in homework*, etc., which were insufficient for analysis.

Although respondents had not been previously divided into subgroups according to the subjects they taught, activities mentioned in the responses confirmed our expectations that teachers of Croatian (as L1) and foreign language teachers, e.g. of English, German or Italian, would provide more responses to this question compared to other teachers. The most common activity for which dictionaries are used is looking up the meaning of words, followed by looking up concepts or their definitions. While it may seem reasonable to assume that most teachers do not differentiate between the meaning of words and concepts in the sense that a linguist would, a closer look at teachers who provided specific examples (e.g. *Yes, they used tablets to visit search certain links to search content with the help of given concepts.; They use encyclopaedias when they need the definitions of specific concepts., In groups, they were looking up explanations of certain concepts.; We look up concepts together, definitions they don't know when they come across in teaching material.*) reveals that in most cases, teachers of Croatian and primary school teachers (teaching grades 1 to 4) referred to subject-specific concepts that students need to acquire. Additional examples of subject teachers other than language teachers using dictionaries are provided in the Discussion section of the paper.

The question about students' reactions to using dictionaries in class predominantly yielded positive responses. However, some respondents were confused by the question, mistakenly thinking that they had already provided an answer in the previous question regarding the type of student activity involving dictionaries. As a result, we decided not to conduct a detailed analysis of these responses.

#### **4.4 Self-reflection on lexicographic works meeting the user needs**

To gather the participants' opinions on the quality of the content and structure of the dictionaries they use, we asked them whether the structure and content of the dictionaries and other resources they have used corresponded to their needs. We also invited them to share any additions or changes they would suggest. Most respondents indicated that the structure and content of resources corresponded or mostly corresponded to their needs. Some pointed out the lack of certain types of dictionaries for Croatian: etymological dictionary, dictionary of synonyms, dictionary of idioms, frequency dictionary, thesaurus, specialized dictionaries within certain fields, good-quality bilingual dictionaries, and even the lack of a single dictionary which would

comprise various sorts of linguistic information. Although many of these resources exist in printed form, their content is often incomplete or outdated, and they are not available online, which makes them more difficult to access. Participants also highlighted that the content of lexicographic resources is often too complex and extensive for school use (especially for primary school students), and possibly even for a wider circle of non-expert users. Furthermore, some comments were made regarding the microstructure of the articles, particularly in dictionaries (see Figure 7).

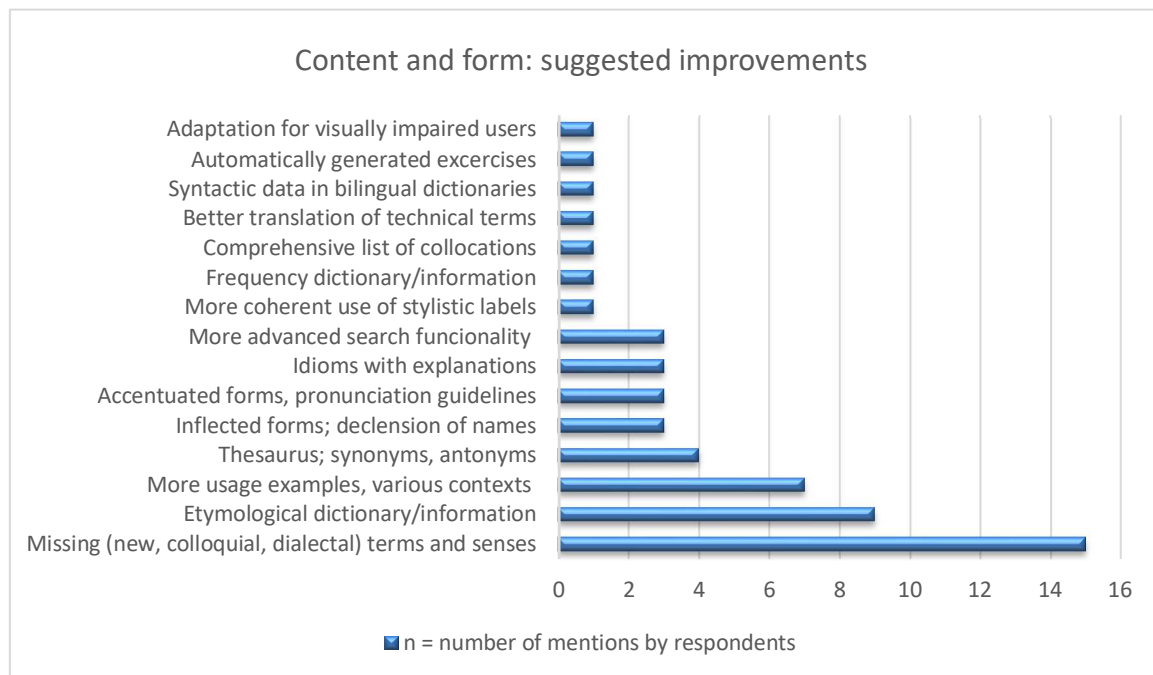


Figure 7: Suggested improvements and additions to the existing lexicographic resources, primarily dictionaries.

The most common concern raised by respondents was the lack of terms and senses in available resources, particularly in relation to newer concepts, technological innovations, and specific language variants (such as jargons, dialects, youth language, and colloquial language use). The need to update and expand existing resources was emphasized. Additionally, some participants expressed the need for more etymological information and a greater variety of usage examples that illustrate different contexts. The latter could be due to the fact that many resources for Croatian are only available in printed form (e.g. dictionaries of foreign words), and online dictionaries are mostly electronic versions of printed ones, where space limitations affect the content. Furthermore, respondents mentioned the absence of complete lists of inflected word forms, including accent marks<sup>4</sup>. The issue of name declension was also raised, as names are typically not

<sup>4</sup> Croatian is an inflectional language with complex accentuation rules, and accentuation can vary within a single paradigm.

included in dictionaries, making it challenging to find information about their forms.

Other suggestions included improving the coverage of synonyms and antonyms, as well as idioms and their meanings; a need for a frequency dictionary and a further extension of the existing base of collocations was also mentioned. In the realm of bilingual lexicography, participants recommended providing more comprehensive information on syntactic differences between languages and ensuring accurate translations of technical terms in specific fields. Some comments focused on the interface of electronic resources, proposing the incorporation of advanced search options (such as suggested entries based on input, searching by inflected forms or metadata) and the integration of automatically generated exercises for students based on dictionary content. One respondent even suggested the implementation of an audio version of a dictionary to cater to visually impaired users. Finally, a noticeable number of respondents prefer electronic/online resources over printed ones, and many of them mentioned using a combination of different resources to obtain the information they need. However, a few responses expressed scepticism towards online resources and expressed a lack of trust in Croatian resources compared to foreign resources, particularly those in English.

## 5. Discussion and Conclusions

The survey was intended as a general overview of the use of dictionaries and related reference works at all levels of primary and secondary education. Therefore, no specific subgroups were analysed, but several conclusions can be reached based on the qualitative analysis of open-ended questions. First, teachers of Croatian as L1 make up the largest user group, and their teaching activities involving dictionaries are what one might expect: checking the meaning of unfamiliar words when reading; using dictionaries as reference tools for language production activities; studying morphological and etymological features of words, as well as explicitly teaching lexicology and lexicography in secondary school grades. Teachers of foreign languages are still the predominant users of specialized language reference works such as dictionaries of idioms, collocations and thesauri. However, a more detailed analysis of class activities per particular user subgroup is needed.

Respondents are generally satisfied with the available resources and often find the information they need by combining different resources. The lack of resources suitable for students at lower levels of education, the outdatedness or incompleteness of the existing resources, and some substantive and formal deficiencies in the content and form of the resources were highlighted as major shortcomings. Respondents often mentioned that they lacked certain types of resources (e.g. an etymological dictionary, a dictionary of synonyms), but it can be argued whether they really need a specialized resource or just access such information, e.g. in the form of a comprehensive online dictionary that would contain such information among other things. Namely, some of these resources exist in printed form, but as such are more difficult to access than online resources, and many of them are outdated. Based on the responses, it can be

concluded that users are generally inclined to online resources; some of them stated that they simply Googled things or used whatever resources they could find on the Internet. However, some users expressed doubt about the quality of the data in some online resources. Finally, especially when it comes to L1 Croatian language teaching, teachers need resources that comply with current language norm, e.g. spelling, and resources that contain normative information, normative recommendations, and the like. Such online dictionaries are currently rare.

Among the resources that teachers are using in class, the most frequently mentioned were general dictionaries of Croatian and other languages, as well as dictionaries focusing on a certain aspect of vocabulary, such as dictionaries of idioms, foreign words, synonyms, etc. The variation was also greatest in that group of resources. This is understandable given that the majority of the respondents were teachers of Croatian as L1 and teachers of other L2 languages.

Among the specialized resources, the *Croatian Encyclopaedia*, available both online and in printed form, and *Wikipedia* were more popular. Less frequently, the respondents mentioned other Croatian specialized online and printed resources, as well as foreign (mainly English) online resources such as *Britannica*. Although terminological resources were very rarely mentioned in the responses, several math teachers reported using lexicographic resources as reference tools for definitions of specialized mathematical concepts. This unexpected high awareness of the possibility of using reference works for teaching non-language subjects among this group of teachers should be fostered in future teacher-oriented activities. Surveys like this one are an excellent opportunity to raise awareness about using terminological resources in teaching, particularly for preparing materials for primary education students, who often need help with understanding complex concepts or formulating their own definitions. Understanding the lexicographic needs of young users – though they may not always be recognized as lexicographic – and meeting them in the form of well-developed teaching materials paves the way for a better development of children's categorization skills and their overall cognitive development.

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## Appendix 1.

### *Survey questions*

#### **The use of dictionaries and other lexicographic resources in teaching**

##### **Section 1/5**

The goal of this research is to examine the extent to which teachers use dictionaries and other lexicographic sources when preparing and carrying out their lessons. The research is completely anonymous, and all collected data will be analyzed on a group level rather than an individual one.

Participation is voluntary, and you can withdraw from answering at any time without any consequences.

Please respond to the questions spontaneously and as honestly as possible. Detailed instructions and the method of responding are provided in the questionnaire, so please read the instructions carefully before providing your answers. As the participants' email addresses are not collected, we are unable to send you a copy of your responses.

By completing the questionnaire, you agree to participate in the research. The questionnaire takes approximately 10 minutes to complete.

We sincerely thank you for your effort and time invested!

Ana Ostroški Anić, Daria Lazić, Maja Matijević and Martina Pavić

Institute of Croatian Language and Linguistics

You will be able to read the research results on the website of the Institute of Croatian Language and Linguistics.

##### **Section 2/5**

###### Personal information

Please provide the following basic demographic information about yourself in this section: gender, age, place of birth, and place of residence.

2.1 What is your gender?

- Male
- Female
- Other
- Prefer not to say.

2.2 How old are you?

- Under 25
- 25–34
- 35–44
- 45–54
- 55–64

- 65 or older

2.3 Where were you born?

*Short answer text.*

2.4 Where do you work?

*Short answer text.*

### **Section 3/5**

#### Workplace related information

Please answer the following questions about your job title and workplace.

3.1 Where do you work?

- In primary school
- In secondary school
- Other

3.2 What is your educational degree?

*Short answer text.*

3.3 What is your current job position (e.g. primary school teacher, Croatian language teacher, biology teacher, etc.)?

*Short answer text.*

3.4 How many years of teaching experience do you have (not just in your current position)?

- Less than 5
- 5–10
- 10–15
- 15–20
- 20–25
- 25–30
- More than 30

3.5 Are you satisfied with your job position?

- Completely
- Mostly
- Somewhat
- Mostly not
- Not at all

### **Section 4/5**

#### Dictionaries and other resources

The following questions pertain to the extent of your use of dictionaries, encyclopedias, terminological databases, and other specialized resources (both in Croatian and foreign languages) in lesson preparation. If none of the provided answers are acceptable, you can enter your response under "Other."

4.1 Do you use contemporary general dictionaries of the **Croatian language** in lesson preparation and

teaching materials (printed Croatian language dictionaries, dictionary portals like the *Croatian Language Portal*, online dictionaries like the *School Dictionary of the Croatian Language*, etc.)?

- Yes, once a month or more
- Occasionally, once or twice every few months
- Rarely, approximately once a year
- No, never
- Other

4.2 Do you use contemporary dictionaries of the **English language** or other **foreign languages** in lesson preparation and teaching materials (printed dictionaries or online dictionaries such as *Merriam-Webster*, *Wiktionary*, *Oxford Learner's Dictionaries*, etc.)?

- Yes, once a month or more
- Occasionally, once or twice every few months
- Rarely, approximately once a year
- No, never
- Other

4.3 Do you use dictionaries of foreign words?

- Yes, once a month or more
- Occasionally, once or twice every few months
- Rarely, approximately once a year
- No, never
- Other

4.4 Do you use specialized and/or technical dictionaries, databases, glossaries, and online resources in the Croatian language (e.g. *Croatian Encyclopedia*, *Wikipedia*, *Struna* database, *Medical Dictionary*, *Chemical Dictionary*)?

- Yes, once a month or more
- Occasionally, once or twice every few months
- Rarely, approximately once a year
- No, never
- Other

4.5 Do you use specialized and/or technical dictionaries, databases, glossaries, and online resources in the English language (e.g. *Wikipedia*, *Britannica*, *IATE* database, *BabelNet*, *thesaurus.com*, etc.)?

- Yes, once a month or more
- Occasionally, once or twice every few months
- Rarely, approximately once a year
- No, never
- Other

4.6 If you use dictionaries and other mentioned resources, what is the reason for doing so? You can select multiple answers or select the provided answers and provide an additional response.

- I search for the meaning/interpretation of unfamiliar words.
- I search for correct spelling of words.
- I search for the meaning of technical terms.

- I search for examples that I can use in teaching or exams.
- I do not use dictionaries or other sources.
- Other

4.7 In your opinion, what are the benefits of using dictionaries and other resources in any form of lesson preparation? Please briefly explain your answer.

*Short answer text.*

4.8 Do the structure and content of the dictionaries and resources you have used meet your needs? Is there anything you would add or change? Please explain.

*Short answer text.*

## Section 5/5

### The use of dictionaries and other lexicographic resources in teaching

The following questions relate to whether you use dictionaries and/or other sources during the actual class. If none of the provided answers are acceptable, you can enter your response under "Other."

5.1 Do you use **printed** Croatian or foreign dictionaries or other lexicographic resources during class?

- Frequently
- Occasionally
- Rarely, a few times throughout your teaching career
- No, never
- Other

5.2 Do you use Croatian or foreign **online** (internet) dictionaries or other lexicographic sources during class?

- Frequently
- Occasionally
- Rarely, a few times throughout your teaching career
- No, never
- Other

5.3 Please list the dictionaries or other lexicographic resources (in Croatian or foreign languages) that you have used during class.

*Long answer text.*

5.4 If you have used dictionaries or other lexicographic resources, did the students actively participate in that activity? If they did, please briefly describe how they participated.

*Long answer text.*

5.5 If the students actively participated in the instructional activity that involved using dictionaries or other resources, how did they react to that activity?

*Long answer text.*

5.6 Do you use dictionaries and/or other lexicographic and specialized resources during class, and in which grades? You can select multiple answers or select the provided answers and provide an additional response.

- 1st grade primary school

- 2nd grade primary school
- 3rd grade primary school
- 4th grade primary school
- 5th grade primary school
- 6th grade primary school
- 7th grade primary school
- 8th grade primary school
- 1st grade secondary school
- 2nd grade secondary school
- 3rd grade secondary school
- 4th grade secondary school
- I haven't used dictionaries and other lexicographic resources in class.
- Other

5.7 What benefits, in your opinion, can students have if they use lexicographic manuals or other sources? Please briefly explain your answer.

*Long answer text.*

Thank you for taking the time to participate in the survey. If you have any comments or feedback, please feel free to write them.

*Long answer text.*