

Investigating the Dictionary Use Strategies of Greek-speaking Pupils

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Abstract

The purpose of this large-scale study was to determine the profile of Greek pupils as dictionary users. In particular, the study investigates the dictionary use strategies that Greek pupils adopt, and records those that they prefer in total and by category while using a dictionary. A total of 745 pupils attending the last three years of primary school and the first three years of junior high school participated in a survey that was carried out in 2014. The data was collected by using the S.I.D.U., a self-report questionnaire. The results revealed that Greek pupils cannot be characterized as strategic dictionary users, as the mean scores of all categories of the dictionary use strategies were below 3.4, which is considered to reflect medium usage. Furthermore, the participants stated that they prefer to employ the look-up and selection strategies more than the lemmatization and the awareness strategies. The medium scores of strategic dictionary use indicate that Greek pupils need training in order to become strategic users.

Keywords: dictionary use strategies, selection strategies, awareness strategies, lemmatization strategies, look-up strategies, strategic dictionary users

1 Introduction

A dictionary is a useful learning tool which provides linguistic information to users. It is not just a classroom tool, but can constantly accompany users in different circumstances (Kent 2011). However, pupils might choose to adopt various other strategies when they encounter a difficulty in the learning process, such as “guessing” or “asking the teacher” instead of using a dictionary, and this could be due to lack of education about using a dictionary properly. As such, students have to be taught how to use a dictionary effectively, and “the training should start early in a course of learning a language and should form an integral part of pupils’ learning” (Hurman & Tall 1998).

This approach is not applied in the Greek learning system, since very few pedagogical dictionaries have been published; dictionary use training is limited to the second grade of primary school (Gavriilidou, Sfyroera, & Beze 2006), and there is complete lack of it at the university level (Anastasiadis-Symeonidis 1999), and this may people do not know how to use a dictionary efficiently in the classroom. This is a vicious circle that should be addressed by educating users how to use a dictionary strategically.

Training users requires first of all investigating which dictionary use strategies they adopt with the intention to understand their needs, preferences, habits and so on. The present study attempts to profile Greek users in order to describe the situation in Greek elementary and secondary schools. The theoretical part of the study which examined dictionary use with regard to learning strategies and the effective dictionary use contributes to the interpretation of the results of this work.

2 Literature review

2.1 Dictionary use as a learning strategy

Dictionary use is considered as a cognitive strategy (O'Malley & Chamot 1990; Oxford 1990). According to O'Malley and Chamot (1990:44) cognitive strategies “operate directly on incoming information, manipulating it in ways that enhance learning” and according to Oxford (1990:37) they “enable learners to understand and produce new language by many different means”. On the other hand, Cohen and Weaver (2006) offer a more practical point of view by classifying learning strategies by language skills, which includes receptive skills such as listening and reading and productive skills such as speaking and writing. They also mention skill-related strategies, such as vocabulary learning and translation. The skills-based inventory of language strategy use (Cohen, Oxford and Chi 2001) categorizes dictionary use in terms of reading strategies, writing strategies and vocabulary learning strategies. Nation (2001) states that dictionary use affects the three basic learning processes: a) reception, b) production and c) vocabulary learning.

Researchers have investigated dictionary use as a reading strategy (Hosenfeld 1977; Barnett 1988; Carrell 1989; Sheorey & Mokhtari 2001; Cohen, Oxford & Chi 2002; Cohen & Oxford 2002) and showed that it has positive effects on reading comprehension. Moreover, some researchers deal with the effects of receptive dictionary use on L2 or FL reading (Bensoussan et al. 1984; Tono 1989; Nesi & Meara, 1991; Luppescu & Day 1993; Knight 1994; Nesi & Hail 2002), although just one (Miller 1995) focuses on L1. The majority of related studies (Tono 1989; Luppescu & Day 1993; Knight 1994; Nesi & Hail 2002) have found that the receptive dictionary use helps users perform better in reading comprehension.

Research which focuses on productive dictionary use is quite limited (Ard 1982; Christianson 1997; Harvey & Yuill 1997; Chun 2004; Santos 2006; Elola, Rodríguez-García & Winfrey 2008; Wolfer et al. 2016). It has to be reported that students prefer to use dictionaries more in receptive circumstances than in productive ones (Tomaszczyk 1979; Béjoint 1981; Scholfield 1982; Γαβρηλίδου 2002). Nesi (1987) agrees with this, and raises the reasonable question of whether this preference is due to users' incomplete knowledge of dictionary use, or to the incomplete information that dictionaries' microstructures provide related to written production. However, research has shown that productive dictionary use positively affects the writing process (Harvey & Yuill 1997). Cohen, Oxford and Chi (2002) and Cohen and Oxford (2002) include dictionary use in the lists of writing strategies, as it contributes to the cultivation and development of writing skills required for written production.

A lot of studies investigate the effects of dictionary use on vocabulary learning, and many categorize dictionary use among the various vocabulary learning strategies. Gu and Johnson (1996) classify vocabulary learning strategies into six categories, one of which is “dictionary strategies”. Schmitt (1997) categorizes dictionary use as one of the “determination strategies” which users adopt in order to discover the meaning of a new word, without asking for help, while Nation (2001) classifies dictionary use in the general class of strategies “sources: finding information about words”. Dictionary use is a vocabulary learning strategy that is often adopted by dictionary users (Fan 2003; Gu 2003; Asgari & Mustapha, 2011), and one that facilitates the process of learning new words (Summers 1988; Luppescu and Day 1993; Hulstijn, Hollander & Greidanu 1996) and helps users maintain new vocabulary in their long-term memory (Knight, 1994; Chen, 2011).

2.2 Effective dictionary use

Often dictionary users wonder which type of dictionary is the most appropriate to meet their needs during the learning process, and what are the steps to follow in order to get the required information.

Researchers have been examining these issues for decades, and thus explored user behaviours, opinions, ideas, difficulties, dictionary misuse, reference needs and skills, as well as the various dictionary use strategies. The identification of all these parameters contributes to profiling the users and finally to effective training in dictionary use.

By investigating the reasons why people choose to use a dictionary researchers can better understand the needs of the users. Hartmann and James (1998: 116) define reference needs as “the circumstances that drive individuals to seek information in reference works such as dictionaries”. Nation (2001) notes that a dictionary can be used for receptive and productive reasons, as well as for learning vocabulary. In order to fulfill those needs particular skills should be developed, and reference skills are “the abilities required on the part of the dictionary user to find the information being sought” (Hartmann and James 1998: 117). It is obvious that there are direct relationships between reference needs and skills, as the last are intended to meet the needs arising while using the dictionary. Users who develop these skills are able to conduct effective searches in the dictionary and enhance their language learning.

Theoretical studies describe the reference skills that users should develop to use a dictionary effectively (Roberts, 1997; Hartmann 1999; Thornbury 2002) and also classify them (Scholfield 1982; 1999; Nesi 1999; Lew & Galas 2008). Nesi (1999) suggests an exhaustive list of skills that a student might need to use dictionaries effectively, which are chronologically listed in six stages: (a) before study, (b) before dictionary consultation, (c) locating entry information, (d) interpreting entry information, (e) recording entry information, and (f) understanding lexicographical issues. All these are time-based except for the sixth, which includes general lexicography skills. Lew and Galas (2008) propose the categorization of skills in terms of: a) reference (alphabetical ordering, the ability to use a dictionary for equivalents, definitions, spelling, pronunciation and obtaining grammatical information; locating words using initial letters), b) inference (the ability to establish and interpret parts of speech; the ability to correctly interpret meanings; finding and handling meanings; grammatical awareness), c) understanding of vocabulary conventions (the awareness of dictionary features and layout knowledge of phonetic symbols; knowledge of parts of speech; word formation; derivatives; past forms; countable and uncountable nouns; awareness of idiomatic expressions; awareness of phrasal verbs; pronouns), and (d) acquiring extra information (the ability to obtain socio-cultural information). Users who have not developed sufficient reference skills will make errors while using a dictionary (Nesi & Meara 1994; Christianson 1997; Nesi 1999; Nesi & Hail 2002). These errors have been classified according to the learning context (Meara & English 1987; Maingay & Rundell 1987; Nuccorini 1994) and the time when they take place (Neubach & Cohen 1988). However, some researchers (Tickoo 1989; Hulstijn & Atkins, 1998) attribute the difficulties that users face during dictionary use to the content and the structure of the dictionaries.

A new approach to effective dictionary use is proposed by Gavriilidou (2012; 2013), who refers for the first time to Dictionary Use Strategies (DUSs) and not to reference skills. This earlier study focuses on the user’s conscious effort while searching in a dictionary, and defines DUSs as “techniques used by the effective dictionary user in order to make a successful search in the dictionary”. Based on the above characteristics, we could add more information and define DUSs as “techniques which the dictionary user adopts consciously, firstly for efficient dictionary consultation and secondly for self-regulation and autonomy while using the dictionary” (Χατζηπαπά 2018)

As the construct of DUSs is a relatively recent one, very few studies have been done so far to describe, record and classify these (Gavriilidou 2011; Gavriilidou 2012, 2013; Chadjipapa & Papadopoulou 2016; Chadjipapa & Papadopoulou to appear).

Gavriilidou (2014) classifies DUSs into four categories:

1. The awareness strategies, which lead to a decision to use a dictionary in order to resolve a problem encountered inside or outside the class
2. Selection strategies, which enable users to select an appropriate dictionary type depending on the problem to be solved and guarantee familiarity with one's own dictionary
3. Lemmatization strategies, which are strategies which help finding the citation form of inflected forms found in the text. Users should be able to use the morphological indices (stems, prefixes, suffixes, inflectional morphemes) of the unknown word that has been met in the text in order to make hypotheses about the look-up form of that word, or should be acquainted with alphabetical sequencing, otherwise lemmatization is not possible
4. Look-up strategies, which control and facilitate the localization of the correct part of the entry where different meanings of the same word form are included.

Effective dictionary use is influenced from either reference skills or the dictionary use strategies the user adopts, and from the information dictionary provides. Atkins and Varantola (1998) state there is a need to both improve dictionaries and train users. However, teaching users how to carry out reference skills or DUSs is perhaps the most important task, as the literature shows that dictionaries are improving day by day, becoming better structured and more user-friendly.

3 Research Method

3.1 Purpose of the study

The purpose of this study was to assess if Greek pupils employ DUSs and to investigate which they prefer to adopt when they consult a dictionary. In other words the study attempts to describe the Greek users' profiles in order to ascertain if they are able to realize successful and effective look-ups in a dictionary. The investigation of these particular DUSs can help us to identify the related reference needs that the participants want to satisfy, which of them are due to incomplete reference skills, and which are due to the poor structures of their dictionaries. In addition, the results of the present study lead to conclusions about the necessity to teach DUSs in Greek schools at in all education levels, and this is also the first work that explores strategic dictionary use among pupils of particular ages.

3.2 Participants

The research was conducted between February and May 2014. The participants were pupils that were attending the fourth, fifth and sixth grades of Greek primary school, and the first, second and third grades of Greek junior high schools. In Greek education, the distribution of the grades is based on the age of the pupils¹, in contrast to other countries educational systems, where the distribution of the grades is based on a combination of age and learning level. The pupils that participated in the research were studying in various Greek public schools, and the total of 745 pupils were collected using convenience sampling. In terms of gender, the pupils were almost equally distributed (see Table 1).

Table 1: Sample distribution by gender.

Gender	Pupils	%
Male	360	51,7
Female	385	48,3
Total	745	100,0

¹ Pupils in the Greek educational system start primary school at the age of 5.5-6.5 years, so at the age of 8.5-9.5 years old are studying in grade 4 of primary school, pupils aged 9.5 -10.5 years old in grade 5 and 10.5-11.5 years old in the 6th grade. As for the junior high school, pupils aged from 11.5-12.5 years are attending the 1st grade, from 12.5-13.5 the 2nd grade and from 13.5-14 the 3rd grade.

With regard to the age/grade, 13.3% of the pupils were attending the fourth grade, 16.5% the fifth grade and the 14.4% the sixth grade of primary school, while 18.3% were attending the first grade, 18% the second grade and 19.6% the third grade of junior high school (see Table 2).

Table 2: Sample distribution by age/class.

Grade	n	%
4 th grade	99	13,3
5 th grade	123	16,5
6 th grade	107	14,4
1 st grade	136	18,3
2 nd grade	134	18,0
3 rd grade	146	19,6
Total	745	100,0

The majority of the participants (94.5%) speak Greek as native language and less than 3% speak as native languages Albanian, Turkish, Russian and so on. The schools that participated in the research are located in Greek cities (Kavala, Komotini, and Chalkida) and on Greek islands (Lesvos and Chios). The primary schools that participated in the study were the Primary School of Polichnitos in Lesvos, the First Primary School of Lesvos, the Fifth Primary School of Komotini, the First Primary School of Chalkida, and the Primary School of Paleochori in Kavala. The high schools that participated in the study were the Second High School of Mitilini, the High School of Antissa and Petra in Lesvos, the Music High School of Komotini and the First High School of Chios.

3.3 Operationalization

In order to conduct the research, the Strategy Inventory for Dictionary Use - S.I.D.U. (Gavriilidou 2012; 2013) was used. The S.I.D.U. questionnaire is a newly-developed self-report instrument that is both internationally standardized and reliable. It has been used in Greek for evaluating strategic dictionary use, mainly focused on printed dictionaries². It consists of 36 items measured on a five-point Likert-scale (never or almost never true of me, generally not true of me, somewhat true of me, generally true of me, always true of me)³, and the questions are divided into four categories as Gavriilidou (2013) organizes them: (a) awareness strategies (14 questions, 1-14), (b) selection strategies (seven questions, 15-21), (c) lemmatization (seven questions, 22-28) and (d) look-up strategies (eight questions, 29-36). S.I.D.U. gives the present study the ability to evaluate strategic dictionary use from a quite large sample in manner that is easy, fast and economical, while helping to profile individuals or groups of users.

The data collection started after the principals' and teachers' agreement, and of course the agreement of the pupils' parents at all school units. Participants completed the Greek version of S.I.D.U. and followed the instructions that the researcher gave them in most cases, or the teachers' instructions when the researcher could not be present. When the researcher was not present, the teachers received clear instructions how to present the purpose of the study to the pupils and how to complete the questionnaire. The participants had 45 minutes to fill in the questionnaire, but none of them needed more than 30 minutes, even those pupils attending primary school.

2 S.I.E.D.U. (Strategy Inventory Electronic Dictionary Use) assesses users' skills and strategies in online electronic dictionary searches (Gavriilidou & Mavrommatidou 2016).

3 The S.I.D.U. is standardized in English (Gavriilidou 2014).

It is important to note that this particular instrument describes the DUSs that users declare they adopt. That means that the answers that pupils provide could reveal either the real actions that they use when using a dictionary or the actions that they wish to employ while consulting a dictionary.

4 Results

IBM SPSS Statistics version 21.0 was used for the data analysis. The questions were encoded by assigning specific numbers to each category of the five-point Likert scale, for example, “never or almost never true of me” was coded 1, “generally not true of me” 2, “somewhat true of me” 3, “generally true of me” 4, and “always true of me” 5.

Cronbach’s coefficient alpha analysis was performed to check the reliability of each category with regard to internal consistency.. In addition, the correlations between each category (sub-scale) and total score were computed, and scores higher than 0.3 were considered satisfactory. Synthetic variables (one for each strategy group) were then constructed for further analyses. Descriptive statistics (frequencies, averages, and standard deviations) were used to investigate the frequency of dictionary strategy use by the respondents.

The findings indicate excellent internal consistency ($\alpha = 0.93$) with regard to the total scale, with results very close to those of Gavriilidou (2013). Likewise, all four sub-scales indicate acceptable to good reliability, ranging from 0.784 to 0.881. In addition, the correlations of each sub-scale within the overall scale for all strategies groups were found to be from 0.350 to 0.645, and higher than 0.30 (see Table 3).

Table 3: Results of reliability testing.

Scale	Items	Correlation	Cronbach’s α
Awareness strategies	14	0.497 – 0.592	0.881
Selection	7	0.350 – 0.574	0.792
Lemmatization	7	0.431 – 0.541	0.784
Look-up	8	0.437 – 0.645	0.828
Total	36	0.350 – 0.645	0.930

The results of the descriptive analysis of the participants’ responses are presented in Tables 4 to 8.

Initially, it was found that the strategic dictionary use was in the range of the medium scores (mean 3.05, see Table 4). Among the four categories of DUSs, the participants stated that they are more likely to employ look-up strategies, with an average of 3.39, and dictionary selection strategies with an average of 3.31, while they stated that they less often adopt the awareness strategies (average = 2, 55) and the lemmatization strategies (mean = 2.89) (see Table 4).

Table 4: MS and SD of the four categories of the dictionary use strategies

Dictionary use strategies	Mean Score	Standard Deviation
Awareness strategies	2.55	0.80
Selection strategies	3.31	0.99
Lemmatization strategies	2.89	0.94
Look-up strategies	3.39	0.91
Total	3.05	0.74

In relation to dictionary awareness strategies (see Table 5), the pupils stated that they use a dictionary mainly at home (M.S. = 3.29) and usually to help themselves with translation (3.02). They use a dictionary to find the meaning of a word (2.97), while they rarely use a dictionary when they read a text (2.14) or to find antonyms (2.22).

Table 5: Frequencies of dictionary awareness strategies' use.

Dictionary awareness strategies	Mean Score	Standard Deviation
1. I use a dictionary to find the meaning of a word	2.97	1.25
2. I use a dictionary to find the spelling of a word	2.50	1.33
3. I use a dictionary to find synonyms	2.49	1.31
4. I use a dictionary to find antonyms	2.22	1.25
5. I use a dictionary to check how a word is used	2.37	1.36
6. I use a dictionary to find the origin of a word	2.44	1.36
7. I use a dictionary to help myself in translation	3.02	1.48
8. I use a dictionary to find the syntax of a word	2.25	1.25
9. I use a dictionary to find the derivatives of a word	2.47	1.30
10. I use a dictionary to find word families	2.61	1.42
11. I use a dictionary to find the meaning of an expression	2.71	1.36
12. I use a dictionary at home	3.29	1.38
13. I use a dictionary when I read a text	2.14	1.26
14. I use a dictionary when I write a text	2.37	1.34
Total	2.55	0.80

While selecting a dictionary users reported (see Table 6) that they know why they need it (3.90) and they know what bilingual dictionary is and what it is used for (3.73). They also stated that they know what an etymological (3.11), general (3.37) and dictionary of technical terms are (2.79) and what they are used for.

Table 6: Frequencies of dictionary selection strategies' use.

Dictionary selection strategies	Mean Score	Standard Deviation
15. Before I buy a dictionary, I know the reason why I need it	3.90	1.46
16. Before I buy a dictionary at the bookshop, I glance through it to see what information it provides	3.12	1.53
17. I choose a dictionary because it has a lot of entries and a lot of information in each entry	3.22	1.42
18. I know what an etymological dictionary is and what it is used for	3.11	1.51
19. I know what a general dictionary is and what it is used for	3.37	1.49
20. I know what a bilingual dictionary is and what it is used for	3.73	1.52
21. I know what a dictionary of technical terms is and what it is used for	2.79	1.52
Total	3.31	0.99

Regarding the frequencies of use of lemmatization strategies (see Table 7), the participants reported that when they come across an unknown word in a text they often try to think in what form they should look for it in the dictionary (3.37), when they hear a word that they do not know, they consider various spelling possibilities and look it up in the dictionary accordingly (3.11). They also claimed that when they do not find a word where they believed it would be they begin a new search with other criteria until they

find it (3.09). In addition, the students reported that they are not used to carefully studying the abbreviations of a new dictionary (2.65) or to carefully reading the introduction (2.67), and they sometimes use the usage labels provided in the entry to see how a word is used in spoken language (2.54).

Table 7: Frequencies of lemmatization strategies' use.

Lemmatization strategies	Mean Score	Standard Deviation
22. Before I use my new dictionary, I carefully read the introduction	2.67	1.55
23. Before I use my new dictionary, I carefully study the list of abbreviations	2.65	1.45
24. When I come across an unknown word in a text, I try to think in what form I should look it up in the dictionary	3.37	1.44
25. When I can't locate a proverb or a set phrase in the entry where I thought I would find it, I begin a new search	2.90	1.44
26. When I hear a word I don't know, I consider various spelling possibilities and look it up accordingly	3.11	1.43
27. When I can't find a word where I thought I would find it, I begin a new search until I find it	3.09	1.41
28. To see how a word is used in spoken language, I use the usage labels provided in the entry	2.54	1.29
Total	2.89	0.94

When they look up for a word (see Table 13), the pupils stated that they consider its initial letter and then look up where they think this letter is in the dictionary (3.97). They also reported that they always have the word in mind during the search (3.83). Finally, they stated that before they use a word they found in the dictionary when writing a text, they read all the information on the grammar of that word (conjugation, syntax) to be sure of the correct usage (3.01).

Table 8: Frequencies of look-up strategies' use.

Look-up strategies	Mean Score	Standard Deviation
29. When I look up a word beginning with E, I search in the first quarter pages as E is one of the first letters of the alphabet	3.50	1.50
30. When I look up a word beginning with L, I open my dictionary in the middle	3.52	1.39
31. When I look up a word, I bear in mind its initial letter and then search where I believe this initial letter is in the dictionary	3.97	1.34
32. When I look up a word, I simply open the dictionary and see if I am near the specific initial letter	3.30	1.43
33. When I look up a word, I constantly bear it in my mind during the search	3.83	1.39
34. When I realize that the word I am looking for has various different meanings, I go through them all one by one, assisted by the example sentences	3.33	1.40
35. When I find the word that I was searching for, I return to the text to confirm that the word matches the context	3.45	1.41
36. Before I use a word I found in the dictionary when writing a text, I read all the information on the grammar of that word (conjugation, syntax) to be sure of the correct usage.	3.01	1.49
Total	3.39	0.91

To sum up, we have to say that the Greek pupils examined in this work had medium range scores for the dictionary use strategies in the four categories, and that they adopt look-up strategies and dictionary selection strategies more frequently, while they seldom adopt the awareness and the lemmatization strategies.

5 Discussion

The present study has investigated the dictionary use strategies that pupils of the last three grades (fourth to sixth) of primary school and the first three grades (first to third) of junior high school adopt by using the S.I.D.U. The results indicate that the pupils' DUSs are in the medium range, and thus that Greek pupils might not be very competent dictionary users, and so their efforts in this regard might not be very effective. The reasons for the non-strategic dictionary use found in this work may be as follows:

- The participants of the survey do not consciously adopt the DUSs.
- The Greek school system does not systematically train users in strategic dictionary use, and teachers do not create opportunities for effective dictionary use.
- There are few pedagogical dictionaries with regard to Greek lexicography.

We can also assume that Greek users do not have sufficient knowledge of effective dictionary use, as a dictionary is not a reference or educational tool in Greek schools. One of the reasons that dictionary use is neglected in the Greek classroom could be the beliefs of the Greek teachers. Chadjipapa and Papadopoulou (to appear) show that Greek teachers in both primary and secondary schools, while claiming that they are "efficient" dictionary users, rarely use a dictionary in the classroom. Thus, if we take into consideration the issue of lifelong learning in the educational process we can conclude that the moderate use of DUSs by Greek pupils could be due to the incomplete use of a dictionary by their teachers. Undoubtedly, non-strategic dictionary use occurs because there is no systematic incorporation of dictionary use strategies into the Greek educational process. Except for very few attempts to integrate DUSs in Greek schools (Gavriilidou, Sfyroera, & Beze 2006) and to inform pupils of the basic functions of a dictionary (Αγγελάκος, Κατσαρού, Μαγγανά 2006; Γαβρηλίδου, Εμμανουηλίδης, Πετρίδου-Εμμανουηλίδου 2006), there has been little effort to improve this situation at any educational level. As such, the pupils' training in DUSs depends on their teachers' intentions.

Further conclusions can be drawn by examining each category of dictionary use strategy. The results showed that pupils stated they adopt the look-up and the selection strategies more frequently, and the lemmatization and the awareness strategies less frequently. The results of the present study are consistent with those of Chadjipapa and Papadopoulou (2016) and Chadjipapa and Papadopoulou (to appear) that explored the DUSs adopted by students and teachers, respectively. Both studies have shown that users encounter difficulties in using the lemmatization and awareness strategies.

This also indicates that pupils know how to use a dictionary effectively but do not know what kind of information they can search for and find in a dictionary. As regards the awareness strategies, the respondents stated that they use a dictionary in order to help themselves with translation issues. That means that Greek pupils use the dictionary mainly for learning FL or L2, and less for learning L1.

Another statement that it is worth mentioning is that the pupils stated that they prefer to use a dictionary to find the meaning of a word or an expression, and much less often use a dictionary to find the spelling, etymology, or syntax of a word, synonyms, opposites and derivatives of a word (awareness strategies). That is very interesting, because the students also stated that they use a dictionary more for productive purposes and less for comprehension reasons. This contradiction shows what the

pupils would like to use a dictionary for, and maybe that they do not know that spelling, syntax and so on are related to written production, a demanding process which requires specific skills and strategies. The statistical analyses revealed that look-up strategies are at the top of the users' preferences. In spite of pupils' medium range scores in strategic dictionary use we speculate that they have developed certain metacognitive abilities, which indicates that after a short time of training in dictionary use they would be able to choose DUSs consciously and make successful look-ups. The second choice is the dictionary selection strategies. The pupils claimed that they know all types of dictionaries, except from the type with technical terms. This is probably because they are not familiar with this particular type and because there are not many such dictionaries on the Greek market. Finally, with regard to the lemmatization strategies, the pupils seemed to more often use those that are related to the macrostructure of the dictionary (a. when I come across an unknown word in a text, I try to think in what form I should look it up in the dictionary; b. when I hear a word I don't know, I consider various spelling possibilities and look it up accordingly; c. when I can't find a word where I thought I would find it, I begin a new search until I find it) than the strategies that are related to the megastructure and the microstructure (a. to see how a word is used in spoken language, I use the usage labels provided in the entry; b. before I use my new dictionary, I carefully study the list of abbreviations; c. before I use my new dictionary, I carefully read the introduction).

6 Limitations of the study

The results of this research are based on the S.I.D.U., a self-report instrument that describes the dictionary use strategies that users declare they adopt. Consequently, their statements may differ from what they actually do in the learning process, and may instead express their willingness to be strategic user or to give a false impression about their skills. The verification of the results with other self-referencing tools, such as oral protocols or interviews, but also with non-self-referencing methods such as observation or their combination (Dörnyei 2007), would thus provide greater reliability and validity to the research. However, triangulation is a time consuming process that is quite difficult to carry out when working with numerous subjects.

Finally, it should be noted that convenience sampling was used for data collection. Certainly random sampling enhances the external validity of any study, and requires more time and cost; however, the particular group examined in this work was collected from the Greek mainland and islands, as well as from urban and non-urban areas, which contributes to the reliability of the results.

7 Pedagogical implementations and further investigations

The medium scores of DUSs' adoption found in this work indicate that there is a need to teach such strategies to Greek students and incorporate dictionary use in the educational process. The integration of DUSs into the educational process would ensure more effective dictionary use and successful look-ups. Several researchers focus on the need to teach how to use a dictionary effectively, and suggest training by enhancing the users' reference skills or DUSs (Ard 1982; Béjoint & Moulin 1987; Herbst and Stein 1987; Gavriilidou 2017). Some other studies have investigated how intervention programs contribute to the development of reference skills or DUSs, and thus more effective dictionary use (Kipfer 1987; Bishop 2001; Głowacka 2001; Carduner 2003; Chi 2003; Lew & Galas 2008, Gavriilidou 2017). In the Greek literature, there are studies that propose intervention exercises or programs in the educational process, but without any control groups to show their effectiveness (Αναστασιάδη-Συμεωνίδη 1997; Γαβριηλίδου 2000; Gavriilidou, Sfyroera, & Beze 2006;

Νικηφοράκη 2003; Ευθυμίου & Μητσιάκη 2007; Γαβριηλίδου, Γιούλη και Λαμπροπούλου 2008; Ευθυμίου 2013). Finally, we have to note that training in effective dictionary use should include entertaining and interesting activities for users (Alhaysony 2011), such as role-plays (Wright 1998), and that the teaching of DUSs should be integrated into the language teaching process by informed instructors (Gavriilidou 2017).

Teachers often suggest dictionary use during the educational process and encourage look-ups in class, but barely know their pupils' reference needs and if they are effective dictionary users (Neubach & Cohen 1988). Chadjipapa and Papadopoulou (to appear) has also shows that a very small percentage of teachers, teaching in Greek schools at both educational levels (primary and secondary), use a dictionary in the classroom. This may be due to the teachers' "non-strategic" dictionary use, as well as to their belief that dictionary use does not offer particular benefits during the learning process. The researchers thus believe that Greek teachers need further training, as their beliefs about dictionary use may influence their students' opinions about strategic dictionary use.

As such, the investigation of how interventional programs impact strategic dictionary use and how Greek teachers' beliefs influence their students' beliefs will contribute to the completion of the Greek dictionary users' profiles carried out in this work. It would also be interesting to investigate if there are any correlations between the users' effective dictionary use and their performance in school. Finally, it is important to understand the relations between the use of DUSs and cognitive and metacognitive skills, and this is another direction for future research.

8 Conclusion

Dictionary use contributes to the language learning process by enhancing language skills. Effective dictionary use implies the adoption of dictionary use strategies, which are part of a student's language learning strategies.

This study attempted to investigate the dictionary use strategies that Greek pupils studying in the three last grades of primary school and in the first three grades of junior high school adopt, and to capture the profiles of the specific users, based on the S.I.D.U. self-report instrument. The moderate use of DUSs, as users of all grades claim, demonstrates the incomplete integration of dictionaries as a reference and educational tool in Greek schools. However, the users' preferences for the look-up and selection strategies indicates high levels of metacognitive ability.

The results of this work help reveal dictionary use in the Greek educational system. The profile of the "non-strategic" user found in this work calls for more dictionary use training and its integration in the educational process, and also the improvement of the Greek pedagogical dictionaries. It should also be noted that improved strategic dictionary use is also an issue for teachers, as a well-trained teacher who is considered an effective user can appreciate the contribution of dictionary use to the learning process, and thus teach how to use such tools effectively.

The present study hopes to reinforce the integration of dictionary use in the Greek educational process and be the basis for further studies on dictionary use strategies.

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