Exploring the Frequency and the Type of Users' Digital Skills Using S.I.E.D.U.

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Abstract

S.I.E.D.U. (Strategy Inventory for Electronic Dictionary Use) is a valid and reliable electronic instrument designed for assessing users' skills in electronic dictionary searches. It can be used for research purposes mainly for the detection of users' profiles in order to design appropriate intervention programs in classrooms. In the present paper, it has been used for collecting empirical data on users' dictionary skills, which is an important but poorly researched topic in language learning contexts. Seven hundred people (students from high schools and universities as well as teachers) participated in the investigation and completed the online questionnaire S.I.E.D.U., reflecting on their own digital dictionary use. It was found that not all users are familiar enough with the strategies required when using digital dictionaries and some of them lack the right skills to fully benefit from this useful source of information. In addition, there are differences in the skills applied by users depending on their level of education but not between university students in different study fields.

Keywords: digital lexicography, user skills, dictionary use

1 Introduction

Dictionaries – both printed and digital –are valuable language tools that satisfy different learner requirements and needs (Fuertes-Olivera 2009; Olimat 2010). They provide access to a vast amount of information about words and their use (Kobayashi 2008; Pousi 2010). Users can, for example, check the meaning, spelling, pronunciation, syntax, usage and etymology of a word, as well as find examples of use and synonyms or antonyms (Taylor & Chan 1994; Elola et al. 2008; Kuzmina & Rylova 2009). They may consult dictionaries to cover a linguistic information gap, to confirm lexical knowledge in cases of uncertainty and to learn what is considered correct (Lew 2010). This is because dictionaries often provide information about the language that cannot be found elsewhere (Koca et al. 2014), thus contributing to language acquisition (Walz 1990; Meitei et al. 2012), vocabulary enhancement (Scholfield 1987; Mdee 1997; Swanepoel 2000; Damascelli 2009) and text comprehension (Knight 1994; Fraser 1997; Watanabe 1997; Tono 2001; Constantinescu 2007; Omar & Mat Dahan 2011; Hamilton 2012; Shen 2013). Their usefulness in different (academic, professional and personal) contexts is therefore unquestionable (Prichard & Matsumoto 2011; Tüm 2012).

However, this does not mean that all users use dictionaries effectively. A number of studies (Christianson 1997; Chi 1998; Nesi 2000; Winkler 2001; Pousi 2010; Efthymiou 2013; Gavriilidou 2014) indicate that many lack the right skills, especially when using digital dictionaries. Compared to print dictionaries, the use of digital reference tools requires a higher level of knowledge and skills that need to be transferred to pupils. The vast content of linguistic sources, various retrieval options and multiple functions require complex reading skills and new strategies (Krajka 2007). It is not good enough to think that a student who often uses electronic reference tools is at the same time capable of doing it effectively (Wojtys 2009).

Therefore, the aim of the present research was to discover if pupils / students / teachers have similar skills when using online dictionaries, the type of strategies dictionary users in each one of the above categories seem to apply the most, and any possible differences between study fields.

2 Method

In order to check the strategies (e.g. lemmatization, search strategies, etc.) applied by users when consulting digital dictionaries in the field of digital lexicography, the Strategy Inventory for Electronic Dictionary Use (S.I.E.D.U.) was used. S.I.E.D.U. is a valid and reliable tool of data collection (Gavriilidou & Mavrommatidou 2016). It is a digital self-report questionnaire, written in Greek and designed for users over 15 years of age. It contains 32 questions, concerning the following subscales:

1) Familiarity with different types of electronic dictionaries and the conditions of their use;
2) Strategies for lemmatization and acquaintance with dictionary conventions;
3) Navigation skills and
4) Look-up strategies in new electronic environments.

For a more detailed description of the way the instrument was constructed as well as its content, construct and discriminatory validity and reliability, see Gavriilidou and Mavrommatidou (2016).

S.I.E.D.U. was used in order to investigate the strategies users reported using when selecting a digital dictionary. 700 people completed the online questionnaire from February to December 2017 via Facebook. They were: 203 high school students (105 male and 98 female), 376 undergraduate students (96 male and 280 female) and 121 teachers (23 male and 98 female). They were all native speakers of Greek and their ages ranged from 15 to 54 years old. High school students came from different types of schools (ordinary, vocational, etc.), whereas undergraduate students and teachers studied/taught a number of many different subjects (mother tongue, foreign languages, math, economics, psychology, etc.) in various Greek cities (Thessaloniki, Komotini, Patras, Athens, and so on).

3 Results

IBM SPSS Statistics 23 was used for the analysis of results, and Welch's ANOVA was applied in order to investigate the differences people reported when using electronic dictionaries. Participants were grouped according to their level of education (High School Student, Undergraduate Student, Teacher) and the study fields (Science and Humanities).

The results examined by the level of education show statistically significant differences in the use of the electronic dictionaries in all four subscales (see Table 1).

Teachers and university students appear more familiar with the different types of electronic dictionaries and the conditions of their use compared to high school students. They also reported using the strategies for lemmatization and acquaintance with dictionary conventions as well as navigation skills to a significantly higher degree than pupils. The same is true in the case of look-up strategies in the new electronic environments, although all participants exhibited a low level of familiarity with these. In fact, teachers seem to use the most strategies of all, according to their statements.

Table 1: Differences in dictionary use strategies according to participants' level of education.

Scale	Level of education	*N*	Mean	Standard Deviation	ANOVA
Familiarity with different types of electronic dictionaries and the conditions of their use	HS	203	2.70	0.77	$F(4, 99{,}8) = 137.13$ $p < 0.001$
	US	376	3.47	0.58	
	T	121	3.70	0.53	
Strategies for lemmatization and acquaintance with dictionary conventions	HS	203	2.44	0.83	$F(4, 34{,}5) = 137.61$ $p < 0.001$
	US	376	3.01	0.71	
	T	121	3.01	0.78	
Navigation skills	HS	203	2.90	0.97	$F(4, 87{,}2) = 138.65$ $p < 0.001$
	US	376	3.73	0.88	
	T	121	4.17	0.82	
Look up strategies in new electronic environments	HS	203	2.30	0.83	$F(4, 87{,}2) = 138.65$ $p < 0.001$
	US	376	2.52	0.74	
	T	121	2.52	0.74	

As far as teaching subject is concerned,[1] the results do not show statistically significant differences in the use of the electronic dictionaries. Undergraduate students of humanities do not seem to have different skills compared to those who attend science courses (e.g. math, economics, physics, biology). The differences in all the skills applied (familiarity with different types of electronic dictionaries and the conditions of their use; strategies for lemmatization and acquaintance with dictionary conventions; navigation skills; look up strategies in new electronic environments) also seem to be rather small (see Table 2).

Table 2: Differences in dictionary use strategies according to participants' study field.

Scale	Study field	*N*	Mean	Standard Deviation	Independent-samples *t*-test
Familiarity with different types of electronic dictionaries and the conditions of their use	Science	84	3.45	0.56	$t(725) = -2.18$ $p = 0.03$
	Humanities	292	3.56	0.57	
Strategies for lemmatization and acquaintance with dictionary conventions	Science	84	2.95	0.79	$t(725) = -1.49$ $p = 0.16$
	Humanities	292	3.05	0.72	
Navigation skills	Science	84	3.92	0.82	$t(725) = 0.834$ $p = 0.41$
	Humanities	292	3.85	0.89	
Look up strategies in new electronic environments	Science	84	2.48	0.73	$t(725) = -0.775$ $p = 0.44$
	Humanities	292	2.54	0.74	

1 In this measurement, the sample of high school students and teachers were excluded.

4 Discussion

According to the results, people do not all have the same skills or apply the same strategies when using digital dictionaries. The participants seemed to be more familiar with the first three types of strategies (especially with navigation skills, then with different types of electronic dictionaries and the conditions of their use, and lastly with strategies for lemmatization and acquaintance with dictionary conventions) than the fourth one (look-up strategies in new electronic environments). The respondents claimed that they are familiar with the different kinds of digital dictionaries (e.g. online, in DVD-ROM / CD-ROM or in a tablet), are able to use search engines or type specific URLs in order to find online lexicographical products, and can navigate easily between different parts of lexicographic data. Moreover, they prefer electronic dictionaries for their speed and ease of use, but they still use paper dictionaries in case the former have a low quality of information. On the other hand, they also claimed that they avoid online dictionaries available by subscription or dictionaries in a DVD-ROM or CD-ROM form. They also do not use the history menu, nor do they study the list of abbreviations or use complex search techniques (e.g. wildcards or phonological representations).

Competence seems to grow along with the level of education. Teachers thus seem to apply more strategies than younger students (of both high schools and universities), according to their statements. In contrast, the pupils reported the worst performance of all. Students, whatever subject they were studying, seemed to have average digital skills.

5 Conclusions

The present paper reports findings regarding users' strategies in electronic dictionary searches, as stated by 700 participants using the newly created online questionnaire S.I.E.D.U. The aim was check the type of strategies digital dictionary users seem to apply the most, and any possible differences between level of education and study fields. The results show that not all users are familiar enough with the strategies required when using digital dictionaries, confirming the literature review. In particular high school students lack the right skills to benefit from such digital resources, and are unable to use them in full. This may be contrary to our expectations that young people are really aware of technological achievements and computing applications in the field of language. Although they may have general knowledge concerning computer use, which allows them to find a lot of electronic lexicography products and navigate them relatively easily, they still need more complex search strategies in digital environments. Therefore, specially designed intervention programs aimed at teaching and practice of dictionary use in different subjects are definitely required at school.

6 Limitations of Research

Since S.I.E.D.U. is a self-report instrument, one cannot be really sure that the respondents' views, as expressed through the questionnaire, are their real and objective perceptions of the focal iussues (Chamot 2004; Lew 2013). Users may not state what they do, but what they think they do, or what they think they ought to do (Hatherall 1984).

In addition, it is not certain that all participants define the categories in the same way, or that they answer honestly. Some users may be unwilling to answer specific questions concerning the frequency of dictionary use or the conditions and strategies of their lexicographic searches.

Finally, another problem is related to the composition of the sample. In fact, in the present investigation, there were far more women than men, as well as students of humanities than science. Therefore, more studies with bigger and more representative samples or with different research methods (e.g. observation studies) are needed. Investigations about the differences in the skills applied by users depending on their age or gender could also be useful.

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