

University Students' Use of Electronic Dictionaries in Hidalgo, Mexico¹

*Rosario de los Milagros Ruíz Ortega² and Patricia Vence González³,
Universidad Autónoma del Estado de Hidalgo, Mexico*

Abstract

This paper presents a descriptive survey of the use of pocket electronic dictionaries (PEDs) by first-year university students at the Health Science Institute at the Autonomous University of the State of Hidalgo (*Universidad Autónoma del Estado de Hidalgo, UAHE*) in Pachuca, Hidalgo. The purpose was to explore general findings about the use of pocket electronic dictionaries and their impact on vocabulary-learning strategies of EFL students. Data were collected using a questionnaire and the results of their responses were tabulated. The participants were 175 students (135 females, 77.5% and 40 males, 22.5%) ranging in age from 18 to 26. The research population consisted of 25 students from seven programs: Gerontology, Pharmacy, Odontology, Psychology, Nutrition, Medicine and Nursing. The findings revealed that students were not consistent in the use of any particular vocabulary strategy; furthermore, the students learned only a small number of words per week: one to three words at the most according to their responses. PEDs were the most-used dictionaries, especially those installed on the students' cellular phones, but printed dictionaries were still being used and some students preferred to use them in spite of having the electronic option. The results suggest that there is a need to promote proper and effective use of dictionaries, especially PEDs, to improve vocabulary learning. The experimental findings can help teachers and learners to enhance language learning by means of more precise and effective guidance and recommendations concerning the use of PEDs.

Resumen

En este trabajo se presenta un estudio descriptivo del uso de diccionarios electrónicos de bolsillo en los estudiantes universitarios de primer año en el Instituto de Ciencias de la Salud de la Universidad Autónoma del Estado de Hidalgo (UAHE) en Pachuca, Hidalgo. El propósito de la investigación fue explorar las condiciones generales sobre el uso de diccionarios electrónicos de bolsillo (DEBs) y su impacto en las estrategias de aprendizaje del vocabulario en los estudiantes de inglés como lengua extranjera. Los datos fueron recolectados a través de un cuestionario y se tabularon los resultados de estas respuestas. Los participantes fueron 175 estudiantes (135 mujeres, 77,5% y 40 varones, 22,5%) en edades comprendidas entre los 18 y 26 años. La población participante consistió en 25 estudiantes de cada uno de los siete programas: Gerontología, Farmacia, Odontología, Psicología, Nutrición, Medicina y Enfermería. Los resultados revelaron que los estudiantes no fueron consistentes en el uso de alguna estrategia de vocabulario en particular. Además, se encontró que los estudiantes aprenden sólo un pequeño número de palabras por semana: una a tres palabras como máximo de acuerdo con sus respuestas. Los diccionarios más utilizados fueron los DEBs, especialmente los instalados en los teléfonos celulares de los estudiantes, pero aún se utilizan diccionarios impresos que algunos estudiantes prefieren a pesar de tener la opción electrónica. Los resultados sugieren que existe una necesidad de promover el uso adecuado y eficaz de los diccionarios, especialmente los DEBs, para mejorar el aprendizaje de vocabulario. Estos resultados pueden ayudar a profesores y estudiantes a mejorar el aprendizaje de idiomas a través de una orientación más precisa y eficaz así como recomendaciones relativas al uso de los DEBs.

Introduction

The learning of vocabulary is an essential element of language learning. In addition, vocabulary is part of any language teaching syllabus or curriculum content that can be deemed sensible and updated. Research on vocabulary learning shows a wide range of vocabulary learning strategies that students may use to improve their word knowledge

¹ This is a refereed article.

² rosariodelos_milagros@yahoo.com.mx

³ venc_271@hotmail.com

(Amiryousefi, 2010; Celce-Murcia, 2001; Nation, 2001). Besides the strategies that teachers may adopt in class, there is another group of strategies that learners use on their own because as Lawson and Hogben (1996) mention that not all students in a group know the same words and learner vocabulary needs differ.

Dictionary Use as a Language Learning Strategy

In the past fifty years, language learning strategies have been researched and this research has identified and documented a large body of strategies. Dictionary use is one of these strategies and dictionaries have become essential tools for university EFL learners who consult them to understand texts and other materials used in their English courses. For many years, printed dictionaries have helped not only students, but also English teachers, often serving as the first option for discovering the meaning of words. With recent developments in digital technology, some learners now prefer different types of electronic dictionaries because they are easy to carry and, in many cases, they can be downloaded free of charge from the internet. Teachers also see the use of electronic dictionary as a basic resource in the contemporary classroom. Because dictionaries are one of the strategies learners use to learn vocabulary, it is important to understand and analyze the impact dictionary use has on language learning.

Literature Review

The internationalization policies currently underway by institutions of higher education are demanding the mastery of a foreign language (English being the language most widely required). Although English has been taught in Latin American universities for a long time, as in the case of Mexico, nowadays, it is becoming more essential in the preparation of university students. Consequently, if university students want to improve their English level to access scholarships abroad, or for international exchanges with other universities, improving their vocabulary becomes vital.

Regarding the acquisition of vocabulary, when inquiring why some students learn a foreign language better than others, He (2010) found that the answer leads to learning strategies which seem not to be effective for all learning styles. Thus, these strategies become a matter of choice and students will select strategies that give them greater learning benefits. In another study, Parry (1991) reports that individuals may have significantly different strategies and that these strategies may radically affect the way in which students learn new words. Moreover, Brown and Perry (1991) show in their investigation that some strategies promote more vocabulary acquisition than others. They compared three learning strategies: key word, semantic and a combination named keyword-semantic; their findings indicate that the combined keyword-semantic strategy increases retention above key word or semantic strategies when used in isolation.

One of the most comprehensive taxonomies of vocabulary strategies is the one proposed by Schmitt (1997), which is summarized in the chart below.

Strategy Categories	Definition	Examples of Strategies		
Determination strategies	used by an individual when faced with discovering a new word's meaning without recourse to another person's expertise	analyze any available pictures or gestures	guess meaning from textual context	use a dictionary (bilingual or monolingual)
Social strategies	involve interaction with other people to improve language learning	ask the teacher for a synonym, paraphrase, or L1 translation of a new word	learn and practice new words with a study group	interact with native-speakers
Memory strategies	involve relating new words to previously learned knowledge, using some form of imagery or grouping (traditionally known as mnemonics)	use semantic maps	use the keyword method	associate a new word with its already known synonyms and antonyms
Cognitive strategies	entail manipulation or transformation of information about words to be learned, although they are not so specifically focused on mental processing as memory strategies	written repetition	keep a vocabulary notebook	put English labels on physical objects
Metacognitive strategies	involve a conscious overview of the learning process and making decisions about planning, monitoring, or evaluating the best ways to study	use spaced word practice (expanding rehearsal)	test oneself with word tests	continue to study word over time

Chart 1. *Taxonomies of vocabulary strategies* (Schmitt, 1997, pp.199-227).

How Dictionaries Aid in Vocabulary Development

In the past, it was thought that the use of dictionaries might cause an over-dependence on translation (in the case of bilingual dictionaries) or it might discourage the practice of more useful strategies for learning vocabulary (e.g., guessing meaning from context, Thornbury, 2002). Nevertheless, experts believe that dictionaries are a unique source of information about words. Learners which are trained effectively in the use of dictionaries can make the most of them to improve their L2 lexicon. Thornbury (2002), for example, lists a group of beneficial skills that students develop when they learn how to use a dictionary: recognizing features of a dictionary's layout, understanding the way dictionaries are coded, discriminating between the different meaning of words, cross-checking with bilingual dictionaries, or using synonyms or antonyms. All of these skills improve learners' ability to master new vocabulary in the target language.

Preferred Dictionaries

There have been many studies of dictionary use, such as the study of Tomaszczyk (as cited in Hasan, Mujahid & Dissanayake, 2013), who conducted one of the first investigation of dictionaries used by non-native speakers of English in Poland in 1979. The study indicates that while bilingual dictionaries are used at all levels for decoding,

monolingual dictionaries are preferred by students with high proficiency levels in the target language. Recent research on the use of electronic dictionaries confirms Tomaszczyk's results. For example, Loucky (2010) investigated first-year Japanese students' use of various electronic dictionaries and the researcher found that: (a) over one third of the students (21/59; 35.59%) used fully bilingual English Dictionaries (BEDs) featuring both monolingual and bilingual lexicons, (b) over one third of the students (20/59; 33.89%) used bilingual print dictionaries, (c) one fourth of the students (15/59; 25.42%) used L2 monolingual print dictionaries, and (d) a few students (3/59; 5.08%) used less expensive EDs equipped with only a single bilingual lexicon. In 2010, Boonmoh conducted a small-scale study of Thai learners who were using PEDs to read English news articles and concluded that there is a growing trend among the participants in his study to use electronic pocket dictionaries. The findings suggest that when students were instructed to use monolingual electronic dictionaries, only a few wanted to use them and they preferred instead to choose for themselves what type of dictionary to use.

Effective Use of PEDs Dictionaries

In 2008, Prichard investigated the use of PEDs by Japanese university students reading non-fictional English texts for general comprehension and he found that students with a good command of the language (high-intermediate and advanced levels) were often selective when considering whether or not to look up a word. However, one-third of the participants were judged to have used the dictionary excessively, looking up words that occurred infrequently and words that were neither essential nor useful for understanding the article's main points. The author argued that based on the results it would be beneficial for learners to be trained to use the dictionary more selectively and efficiently. Recent studies include those from Boonmoh (2012) in Thailand and Dashtestani (2013) in Iran. Boonmoh studied the use of PEDs for writing by English learners at a Thai university. The findings confirmed Prichard's results concerning the lack of adequate skills and knowledge of the use of PED conventions. It was also found that learners tended to read only the information available on the PED screen. Few participants would scroll down to see more information. Dashtestani's investigation included student and teacher perspectives on the use of electronic dictionaries, giving similar results to the studies of Prichard (2008) and Boonmoh (2012) although teachers and students in Dashtestani's study held moderately positive attitudes towards the use of electronic dictionaries for learning EFL. Dashtestani reported that Iranian EFL students lacked training in the use of electronic dictionaries and in how to select a suitable electronic dictionary and its services for learning EFL.

Despite the abundance of research conducted on the use of electronic dictionaries for learning English as a foreign language, the scope of these studies is mostly restricted to PEDs used by Asian learners (see Loucky, 2010 for an extensive compilation of studies about EDs) while limited research has been undertaken on the use of electronic dictionaries by Latin American EFL learners, mainly Spanish speakers. One of the few studies found in Mexico is "Using portable devices as personal learning tools in the English class" (Herrera et al., 2014). Although this study is not specifically focused on the use of electronic dictionaries, the authors show positive results in student use of a monolingual dictionary. However, more studies are needed to determine the extent and effectiveness of dictionary use by Spanish speakers learning English as a Foreign

Language. Therefore, the current study was carried out to contribute to this area of research. Moreover, considering the growing interest in the use of electronic dictionaries for learning foreign languages, this study will have direct implications for the effective use of these tools in Latin American contexts.

Purposes

The purpose of this study was to empirically identify and describe the preferences of first-year Mexican university students in the use of dictionaries to learn English. The research questions guiding this investigation were:

- What kind of dictionaries do Mexican university students use to learn vocabulary in English?
- To what extent does the use of electronic dictionaries impact student learning and vocabulary strategies when studying English?
- To conduct the study, the researchers focused on two main issues: the participants' vocabulary-learning strategies and their PEDs preferences.

Method

This research was based on a quantitative analysis of the responses to a questionnaire administered to the research population. The questionnaire had been previously piloted with a comparable group of volunteers and proved to be appropriate in terms of the information the study set out to ascertain. The participants were 175 students: 135 females (77.5%) and 40 males (22.5%), ranging in age from 18 to 26. The representative sample consisted of 25 students from each group of first semester students from seven undergraduate programs: Gerontology, Pharmacy, Odontology, Psychology, Nutrition, Medicine, and Nursing. Data collection was completed in a month's time using a convenience sampling method. After students completed the questionnaires, their responses were tabulated.

The questionnaire in this study was entirely designed for this research. It was administered in Spanish to be sure the participants understood the questions because they were students in the first semester at the university, many of whom were beginning learners of English. The questionnaire consisted of 17 questions divided into two parts. The first part focused on learners' strategies for developing vocabulary using a five-level Likert items (questions 1 to 6) and the second part focused on the use of dictionaries to learn English and contained short answer, multiple choice responses (questions 7 to 17).

Findings of the Participants' Vocabulary Learning Strategies

EFL students were asked to respond to four questions focusing on their strategies for learning new vocabulary. This section was developed based on a five-point Likert scale from *always* (1) to *never* (5). First, students were asked if they look up unknown words after finishing the reading. The results show that of the seven programs represented in the study, students in the Nursing program had the highest percentage; 88% (20/25) of learners chose the response *almost always* for this learning strategy. Medicine students had the second-highest percentage of students which was 44% (11/25) for the same option. Among the other programs, the data show that students use this strategy, but less frequently; the response *sometimes* was chosen by 12% to 58% of students. Only

4% to 8% of students in other programs reported that they never use this learning strategy.

Students were also asked whether they guess the meaning of a word from its context. The most frequent response was *almost always* in the following percentages: Psychology (56%); Medicine (40%); Gerontology (36%); Odontology (32%). The second most common response was *sometimes*: Nutrition and Nursing (44%). The least frequent choice was *always*: Pharmacy (24%); and Gerontology and Nutrition (16%).

A third question was concerned about the use of mnemonics to memorize words. A total of 64% of the students from Medicine answered *sometimes*, while the same response was chosen by 52% of students from the Pharmacy program, 32% of students in the Nursing program, and 32% of students in the Odontology and Nutrition programs. The *almost always* response had the highest percentage of 40% among students in the Psychology program.

The fourth question asked the participants if they use the technique of making flashcards by writing new vocabulary words and their meaning on index cards and use them regularly. Data for this strategy show that the *sometimes* option was chosen by 60% of students in Medicine, 48% of students in Nursing, and 40% of students in the Psychology program. The option *seldom* was selected by 52% of students in the Nutrition group; 40% of students in Gerontology, and 36% of students in Odontology and 28% of students in the Pharmacy program chose the *never* option.

The fifth question asked about the number of words students usually learn each week on a scale from none to more than ten. The majority of the EFL students selected the option of one to three words per week. The percentages for this option were as follow: Psychology 52%, Nutrition and Medicine 44%, Gerontology 40%, and Pharmacy 36%. Only Nursing (52%) and Odontology (48%) selected the option of four to seven words per week.

Participants' PED Preferences

Questions 7 to 10 were designed to gain information about students' preferences of dictionaries. It can be said that most students use PEDs on their cellphones with the following percentages: Psychology, 60%; Nutrition, 55%; Medicine, 52%; Pharmacy, 58%; and Gerontology, 35%. Data revealed that students prefer PEDs because they are quick and easy to use. However, 60% of students in Nursing and 79% of students in Odontology prefer a printed dictionary because it is not dependent on an Internet signal and they said it has clear information.

Participants' PEDs to Learn Vocabulary and Grammar

The findings from questions 11 to 17 show that most students use a bilingual English-Spanish dictionary to learn vocabulary and grammar: Psychology, 90%; Nutrition, 90%; Medicine, 100%; Pharmacy, 90%; Gerontology, 90%; and Odontology 90%. This may suggest that many students had not used English-English dictionaries yet. In response to question 15, 80% to 90% of students reported using their dictionary at school and home to learn vocabulary and grammar. Question 16 asked students what other ways they use the dictionary to learn vocabulary, grammar, pronunciation or others. The responses show that they use a dictionary to learn vocabulary and grammar mainly: Psychology, 55%; Nutrition, 50%; Medicine and Pharmacy, 40%; and Gerontology and

Odontology, 30%. Regarding what kind of dictionary is used, the results inform us that most students do not always use a dictionary. Although the participants' previous answers show they do not make much use of dictionaries when learning English, they are aware of the importance of using them. Concerning the respondents, 70% to 80% reported that they consider the use of a dictionary as *very important*. The following tables represent the answers for questions 1-5.

Q.1 When I read English texts I make a list of words I do not understand to find its meaning when I end the reading.

	Gerontology	Pharmacy	Odontology	Psychology	Nutrition	Medicine	Nursing	Total
Always	1	0	0	2	0	0	0	3
Almost always	3	7	5	2	7	11	20	55
Sometimes	14	12	17	14	12	10	3	82
Seldom	4	4	3	7	5	2	2	27
Never	3	2	0	0	1	2	0	8
Total	25	25	25	25	25	25	25	175

Q. 2 When I do not understand a word in English, I try to guess its meaning according to the context of the reading.

	Gerontology	Pharmacy	Odontology	Psychology	Nutrition	Medicine	Nursing	Total
Always	5	7	3	5	4	2	8	34
Almost always	9	6	8	14	10	10	2	59
Sometimes	7	7	8	3	11	6	11	53
Seldom	3	3	4	2	0	6	4	22
Never	1	2	2	1	0	1	0	7
Total	25	25	25	25	25	25	25	175

Q 3 I use mnemonic techniques (to relate words with objects) to memorize words.

	Gerontology	Pharmacy	Odontology	Psychology	Nutrition	Medicine	Nursing	Total
Always	4	3	5	5	4	4	1	26
Almost always	5	8	9	10	4	4	11	51
Sometimes	5	13	8	6	8	16	8	64
Seldom	7	1	2	2	8	1	3	24
Never	4	0	1	2	1	0	2	10
Total	25	25	25	25	25	25	25	175

Q. 4 I use the technique of making flashcards with words and meaning and use them regularly to learn English vocabulary.

	Gerontology	Pharmacy	Odontology	Psychology	Nutrition	Medicine	Nursing	Total
Always	2	0	3	1	2	1	1	10
Almost always	3	6	6	3	3	3	7	31
Sometimes	6	5	4	10	1	15	12	53
Seldom	10	7	6	6	13	4	5	51
Never	4	7	6	5	6	2	0	30
Total	25	25	25	25	25	25	25	175

Table 1. Vocabulary learning strategies.

Q. 5 How many words in English do you learn every week?								
	Gerontology	Pharmacy	Odontology	Psychology	Nutrition	Medicine	Nursing	Total
None	1	1	0	1	3	1	1	8
1 to 3	13	12	7	13	11	11	6	73
4 to 7	6	6	12	10	9	5	13	61
8 to 10	2	3	3	0	0	5	4	17
More than 10	3	3	3	1	2	3	1	16
Total	25	25	25	25	25	25	25	175

Table 2. Number of words learnt per week.

Discussion

Based on the findings of this study, the two researchers concluded several things. First, there was a great similarity in the responses concerning the use of strategies. The evidence shows that students are aware of some of them. This finding corroborates the research on learning strategies by He (2010) and Schmitt (1997). These results can help language teachers to improve their teaching methods in terms of promoting a variety of learning strategies from which students can experiment and choose those that are most useful to their learning styles.

The second point deals with the use of a bilingual dictionary which seems to be popular among the freshmen students at the Health Science Institute, demonstrating similar findings with the results obtained by Loucky (2010). The overall rate of the answers was over 90%, showing that most students use bilingual dictionary (English-Spanish). This may suggest that the learners are not familiar with the use of a monolingual dictionary when they enter the university. The implication that can be observed from this finding is that the use of bilingual dictionaries beyond the elementary level prevents some students from learning other aspects of the language, especially information provided on linguistics and semantics (which are included in English-English dictionaries and PEDs). This would help them to expand their vocabulary to a higher command of the language as was reported in Tomaszczyk's study (Cowie, 1999).

In question 15, 80% to 90% of these ELT students reported using a dictionary at school and home to learn mostly vocabulary and grammar. Nevertheless, comparing this result with the low number of words the participants reported learning weekly (1 to 3), it can be asserted that these learners are not making the most of dictionaries. There may be a kind of underuse regardless of whether students are using printed or digital dictionaries. It may be said that while students are using the dictionary to translate words, that does not mean they are really learning new vocabulary. These findings are consistent with those of Boonmoh (2012) and Dashtestani (2013) in relation to the fact that unfortunately students lack skills and knowledge in the use of dictionaries. Consequently, teachers can introduce students to vocabulary learning strategies by designing explicit and useful tasks. Future studies are needed to give us insight about why this might be happening.

The answers from the previous questions contrast with the participants' responses regarding the importance of using a dictionary in their English classes. Over three quarters of the students (70% to 80%) consider it *very important*. The implications of

these findings for language teachers are very clear, as this study provides evidences that the use of PEDs is more common than what is supposed. Perhaps students may not be using them effectively for vocabulary development. Therefore, teachers should provide advice and training to their students on how to use a dictionary to promote learning strategies among learners.

Finally, from the results, we see the need to carry out further research in order to provide an accurate and deeper understanding of the relationship between learning strategies and the use of PEDs. Also we consider that students in their last English course in the university should be polled to know how much they have improved in the use of a dictionary, what new strategies they have learnt, and if they have used a bilingual or monolingual dictionary as well.

Conclusions

The findings of this study are consistent with previous assumptions about the use of PEDs versus printed dictionaries in language learning. The results indicate that most university students at the Health Science Institute at the Autonomous University of the State of Hidalgo use bilingual electronic dictionaries. However, students still use printed dictionaries for learning vocabulary and grammar. Additionally, this research found that some participants lack the skills needed to use a dictionary effectively, either a digital or printed version. Based on these results, the researchers suggest that EFL students would benefit from being taught how to use both bilingual and monolingual printed or PEDs dictionaries to achieve better results in learning English.

References

- Amiryousefi, M., & Vahid, H. D. (2010). Vocabulary: Challenges and Debates. *English Language Teaching*, 3(3). Retrieved from <http://files.eric.ed.gov/fulltext/EJ1081835.pdf>
- Boonmoh, A. (2010). The use of pocket electronic dictionaries by Thai university students. *Lexikos*, 20, 680-690. doi: <http://dx.doi.org/10.5788/20-0-161>
- Boonmoh, A. (2012). E-dictionary use under the spotlight: Students' use of pocket electronic dictionaries for writing. *Lexikos*, 22. doi: <http://dx.doi.org/10.5788/22-1-997>
- Brown, T. S., & Perry, F. L. (1991). A comparison of three learning strategies for ESL vocabulary acquisition. *TESOL Quarterly*, 25(4), 655-670. doi: 10.2307/3587081
- Celce-Murcia, M. (2001). Language teaching approaches: An overview. In M. Celce-Murcia (Ed.), *Teaching English as a second or foreign language*, 3-11. Boston: Heinle & Heinle.
- Dashtestani, R. (2013). EFL teacher's and students' perspectives on the use of electronic dictionaries for learning English. *CALL-EJ*, 14(2), 51-65. Retrieved from http://callej.org/journal/142/Dashtestani_2013.pdf
- Hasan, N., Mujahid, G. A., & Dissanayake, M. K. (2013). English dictionary ownership and usage among the Acehese students in Malaysian University. *Journal of Education and Practice*, 4(4). Retrieved from <http://iiste.org/Journals/index.php/JEP/article/view/4585>
- He, Y. (2010). A study of L2 vocabulary learning strategies. Kristianstad University. The School of Teacher Education. D-essay in English Didactics. Retrieved from <http://www.divaportal.org/smash/get/diva2:326994/fulltext01.pdf>
- Herrera Díaz, L. E., Cruz Ramos, M., & Sandoval Sánchez, M. A. (2014). Using personal portable devices as learning tools in the English class. *HOW*, 21(2), 74-93. doi: <http://dx.doi.org/10.19183/how.21.2.5>
- Lawson M. J., & Hogben, D. (1996). The vocabulary-learning strategies of foreign-language students, *Language Learning*, 46(1), 101-135. Retrieved from <http://moghanaras.com/wp-content/uploads/2014/09/Vocabulary-Learning-Strategies-of-Foreign-Language-Students.pdf>
- Loucky, J. P. (2010). Comparing electronic dictionary functions and use. *CALICO Journal*, 28. doi: <http://dx.doi.org/10.11139/cj.28.1.156-174>
- Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.

- Parry, K. (1991). Building a vocabulary through academic reading. *TESOL Quarterly*, 25(4), 629-653. doi: 10.2307/3587080
- Prichard, C. (2008). Evaluating L2 readers' vocabulary strategies and dictionary use. *Reading in a Foreign Language*, 20(2), 216-231. Retrieved from <http://files.eric.ed.gov/fulltext/EJ815122.pdf>
- Schmitt, N. (1997). Vocabulary learning strategies. In N. Schmitt & M. McCarthy (Eds.), *Vocabulary: Description, acquisition, and pedagogy*, 199-227. Cambridge: Cambridge University Press.
- Thornbury, S. (2002). *How to teach vocabulary*. Harlow: Longman.