DICTIONARY USE AND VOCABULARY CHOICES IN L2 WRITING

Idoia Elola, Vanessa Rodríguez-García, Katherine Winfrey
Texas Tech University, U.S.A.
idoia.elola@ttu.edu
vanessa.rodriguez-garcia@ttu.edu
katherine.m.winfrey@ttu.edu

In second language (L2) writing research it is essential to focus on the learners' writing processes to understand their L2 vocabulary use; namely, limitations, choices, and misunderstandings. This article offers an overview of learners' Spanish-English online dictionary use in relation to L2 writing tasks, the strategies being used, and the limitations encountered while on task. The diverse data collection techniques—written texts, verbal protocols and interviews—provide a holistic view of students of Spanish as a foreign language in their online dictionary use, as well as information about the learners' reflections on their dictionary use. Results do not only indicate that learners use the dictionary to find a word they did not know, to check their spelling, or to ascertain the meaning of a word, but also to express themselves better or translate the complexity of their English thoughts into Spanish. However, the texts they produced result also from their limited ability in the dictionary use and inability to transfer known strategies from their first language (L1) to their L2. Finally, certain pedagogical implications are discussed to help learners achieve a better command of the dictionary.

Key words: Online dictionary use, vocabulary learning strategies, vocabulary acquisition, dictionary strategies and second language writing.

En la escritura de una segunda lengua (L2), es esencial concentrarse en los procesos de escritura de los estudiantes para entender el uso de vocabulario

en la segunda lengua; principalmente, limitaciones, elecciones, y malentendidos. Este artículo ofrece una visión global del uso que hacen los estudiantes del diccionario español-inglés en Internet en relación a tareas de escritura, estrategias, y las propias limitaciones de los estudiantes. Las diversas técnicas de recogida de datos—textos, protocolos verbales y entrevistas—contribuyen a ofrecer una perspectiva holística del uso de los diccionarios en Internet de los estudiantes de español como lengua extranjera, además de mostrar las reflexiones de los estudiantes sobre su propio uso del diccionario. Los resultados no solamente indican que los estudiantes utilizan el diccionario para encontrar una palabra desconocida, revisar la ortografía, o averiguar el significado de una palabra, sino también para expresarse mejor o traducir la complejidad de sus pensamientos en inglés al español. Sin embargo, los textos reflejan su limitada habilidad con el uso del diccionario y su incapacidad de transferir estrategias de la primera lengua (L1) a la L2. Finalmente, se presentan varias implicaciones pedagógicas para ayudar a los estudiantes a lograr un mejor dominio del diccionario.

Palabras clave: El uso del diccionario en Internet, estrategias de aprendizaje de vocabulario, adquisición de vocabulario, estrategias del diccionario y escritura en una segunda lengua.

1. Introduction

The burgeoning use of online dictionaries reflects the worldwide population's need to access multiple lexical sources rapidly. Language learners, who are generally technologically well informed, are motivated to tap into these resources and take an active approach toward their learning. However, regardless of the accessibility of these online tools, most can probably recount anecdotes about learners' misuse of the dictionary, both in oral and written productions: '*Tomar un chaparrón*' instead of '*ducharse*' (to take a shower); '*yo cuelgo afuera con mis amigos*' instead of '*paso tiempo con mis amigos*' (I hang out with my friends); and '*fechar*' instead of '*salir con alguien*' (to date someone). Learners' inability to use this tool effectively stems from a lack of knowledge of how the L1 and L2 mental lexicon functions as well as a lack of familiarity with the dictionary itself.

At present, the majority of the research studies related to dictionary use have focused on its relationship to L2 reading, such as the use of bilingual or monolingual dictionaries, dictionary use versus glossaries, and the impact of dictionary use on the learners' reading processes. Although this body of research offers insights into learners' behavior in relation to dictionary use, it is also essential to observe students' ability to use the dictionary as a tool for written production and to teach them to use it more effectively. It is important, as Scholfield (1982) suggested, to view the use of a dictionary not as a straightforward technical and passive activity, but rather as a complex process of hypothesis testing that involves the active participation of the learner. Within the realm of L2 writing, this article explores issues of dictionary use in relation to foreign language (FL) writing, more specifically in terms of Spanish.

2. Literature review

Research in the field of vocabulary acquisition and learning has shown the advantage of equipping learners with specific strategies to enhance and further the learner's lexical acquisition process. Several taxonomies have included dictionary use as an important learning strategy (Oxford, 1990; Gu & Johnson, 1996; Schmitt, 1997; Nation, 2001). Gu and Johnson (1996) and Schmitt (1997) consider dictionary use as a cognitive strategy that occurs in conjunction with guessing and note-taking strategies. Similarly, Nation's division (2001) of strategies describes dictionary use as a source strategy that provides information about a specific item.

Furthermore, studies on the use of vocabulary strategies have revealed that active strategy users are more successful vocabulary learners than those learners with a poor knowledge of strategy use, emphasizing the need to provide learners with conscious strategies (Ellis, 1994; Sanaoui, 1995; Lawson & Hogben, 1996; Chamot, 2001; Fan, 2003; Gu, 2005; Macaro, 2005; Peters, 2007). Moreover, most studies conducted on the use of dictionaries as a vocabulary learning strategy conclude that dictionary use has a positive influence on the learner's acquisition process (Hulstijn, 1993; Luppescu & Day, 1993; Knight, 1994; Jones, 1995; Laufer & Hadar, 1997; Bruton & Broca, 1997, 2004; Laufer & Hill, 2000; Bruton, 2007). Primarily,

research on dictionary use has focused on exploring the benefits of monolingual (Ard, 1982; Scholfield, 1982; Meara & English, 1987; Thompson, 1987; Hartmann, 1991; Summers, 1995) and/or bilingual dictionaries (Baxter, 1980; Laufer & Hadar, 1997; Asher, Chambers & Hall, 1999; Barnes, Hunt & Powell, 1999; Bishop, 1998, 2000; Tall & Hurnam, 2000). Studies have also discussed learners' intentions when consulting dictionaries, namely checking spelling, gender and word meaning (Bishop, 1998, 2000), or searching for additional grammatical, phonological and pragmatic information (Cano Ginés, 2004). However, researchers have also realized that the effectiveness of vocabulary learning strategies depends on the type of task, the learner's preferences, personal characteristics, and the learning context (Williams & Burdens, 1997; Cohen, 1998, 2001; Gu, 2003).

One limitation in the use of the dictionary stems from the learner's inability to separate lexical and semantic meanings. From a psychological perspective, as Vygotsky (1978) noted, the mind is related to the social context, and since language is related to the mind, language consequently depends on the social context. Vygotsky divides linguistic development into three stages: the object-regulation stage (learner's language ability is controlled by the object); the other-regulation stage (learner is influenced by others in making his/her linguistic choices); and the self-regulation stage (learners are able to control their own lexical choices). When applied to dictionary use and vocabulary choice, learners appear to follow the same stages of regulation; it is not until the self-regulation stage that they develop their semantic knowledge (Lantolf, Labarca, & den Tuinder, 1985; Jiang, 2004). Studies indicate that semantic development is a slow process in which L2 learners learn a word at the lexical level and then at the semantic level. Hence, L2 learners need to have an idea of the form and meaning of the word in their L1 in order to find its equivalent in their L2 in a dictionary. Thus, a learner's specific stage of development influences the types of strategies used when looking up words: at a lower level of development, a learner will only be able to apply a lexical strategy, whereas at a more advanced level, a learner will engage in semantic lookup strategies (Hartmann, 1983; Laufer & Hadar, 1997). Different stages of development also make certain grammatical categories more difficult to acquire, such as prose words, domain-specific words, and inflectional words (González, 1999).

Apart from L2 proficiency limitations, certain learners are unable to perform a successful search due to their inability to use the dictionary correctly. Christianson (1997) indicates that successful FL dictionary users, regardless of their level of English proficiency, are able to employ more sophisticated lookup strategies. Dictionary users may benefit from using efficient dictionary strategies (Graves, 1987; Summers, 1988), attending to all of the information in an entry before making conclusions about the meaning of a word (Laufer & Hadar, 1997; Hunt & Beglar, 1998), working with activities in which vocabulary is practiced in various contexts (Schmitt, 1997), and from being instructed not to take the first word that appears in the entry in the dictionary, so as to reduce the notion of a one-to-one equivalency between their L1 and L2 (Barbe, 2001).

Finally, it is important to note that new technological and computer developments have facilitated learning with tools such as electronic and online dictionaries, online translators, and thesaurus features available in Microsoft Word. The advantages that these new technologies offer to learners, teachers and researchers include: electronic dictionaries with multimedia annotations (Chun & Plass, 1996; Hulstijn, Hollander, & Greidanus, 1996), computer logs, trackers of learner behavior and online vocabulary glosses (Gu, 2003), and interactivity, hypertextuality, quick access, and multimedia effects, as well as other extra features such as video, audio materials, corpus examples, interactive exercises, and games (Pérez Torres & Sánchez Ramos, 2003). Most studies about electronic dictionary use have offered similar conclusions to those of studies on traditional dictionaries (Aust, 1993; Knight, 1994; Segler, 2002; Hill & Laufer, 2003; Pérez Torres & Sánchez Ramos, 2003; Fan, 2003; Loucky, 2005; Bruton, 2007; Peters, 2007).

Nevertheless, within the realm of online dictionary research, this article intends to further investigate issues and concerns about learners' inability to use online dictionaries effectively, select the correct information about certain words and employ strategies to search successfully for the appropriate meaning of the word. Although the overarching aim was to understand how learners use online dictionaries for L2 writing purposes, this idea was further explored in the following questions:

1. In what instances do FL learners consult online dictionaries while writing in Spanish?
2. What kinds of lexical items are problematic for FL learners while using online dictionaries?
3. What strategies do FL learners employ in their search for the appropriate meaning of lexical items?

Furthermore, this article presents some pedagogical suggestions for online dictionary use that can be incorporated in L2 classrooms.

3. Methodology

Setting, participants and tasks

Two studies were conducted at a Southwestern university with undergraduate students ranging from 19- to 22-years-old, majoring in fields other than Spanish. The first study was conducted with six learners at the intermediate level who were revising, editing, and creating new texts. The learners' think-aloud protocols[1] (TA) were video recorded while they were working on a revision task. Then, the learner's stimulated-recall protocol (SR) was triggered by the video of his/her performing the revision of the essay. Finally, the researcher set interviews (I) with the learners to obtain further information not observed in the stimulated-recall protocol[2] (see Table 1). The second study, which involved a translation task (English to Spanish), consisted of four participants at varying levels: beginner (1), intermediate (2) and advanced (1). A software program known as Camtasia recorded the learners' translation work; this program can capture and record images from a learner's computer desktop. This allows the researcher to see what the learner worked on and the sources consulted. After completing the task, the researcher watched the recording with each learner, which triggered the learner's comments as part of a stimulated-recall protocol. The participant's responses were also recorded by the audio mode of the Camtasia program. The triangulation of the data provided a more holistic perspective of the learners' problems, their strategy use, and their success or lack thereof when working with online sources.

Table 1. Tasks and data collection techniques

Studies	Tasks	Data collection techniques
First study (N=6)	Revision and editing tasks: Learners revised an essay related to games of chance based on teacher feedback on content and form.	Revision of essay Think-aloud protocols Stimulated recall protocols Interviews
Second study (N=4)	Translation task: Learners translated a paragraph from English to Spanish.	Translated texts Stimulated recall protocols Post-test

4. Results

All of the collected data from both studies were analyzed in relation to learners' online dictionary use**.** The oral data from the think-aloud protocols, stimulated-recall protocols and interviews were transcribed and categorized. The translation tasks and essays were also categorized in the same manner. Once the results were gathered, they were grouped following the parameters set by the research questions**.** Although the tasks were different and entail different degrees of difficulty, the studies yielded identical results regarding dictionary use. Thus, the results of both studies will be presented indistinctively. The analyses of the data offered interesting insights into: (1)

learners' uses of online sources, (2) learners' lexical difficulties and (3) learners' strategy usage.

4.1. Learners' Uses of Online Dictionaries

From the information collected, six categories emerged. Each category illustrates the moments in which learners made use of the online dictionary: (1) correction of grammatical errors, (2) clarification of verb conjugation, (3) spell checking, (4) looking up unknown words, (5) verification of meaning, and (6) consideration of style.

Correction of grammatical errors: The learner's purpose was to revise the grammatical aspects of the word: "I looked at words to help me with my grammar errors, to help me clarify what was wrong" (I). In the following excerpt the learner had an idea that the word for 'these' was '*estos*' but decided to consult the dictionary to reinforce his intuition. He realized that 'benefits' (*beneficios*) was a masculine word in Spanish and therefore chose '*estos*' to agree both in gender and number.

> The casinos bring benefits to the state but these benefits estos, estos? [looks it up] estos/as, masculine or feminine? Beneficios, masculine, then **estos beneficios**[3], they are… (TA)

Clarification of Verb Conjugation: Although bilingual dictionaries do not provide verb conjugations in conjunction with the word entry, certain online dictionaries such as www.wordreference.com provide a link to a verb conjugator. One learner stated that she used the link within the dictionary to find the different verb conjugations for the verb '*poder*' (to be able to).

Spell Checking: In some instances, online dictionaries were used to verify spelling when doubts surfaced: "Oh, yeah, I looked at 'responsible' to see how to spell it, which I didn't do correctly" (I).

Unknown Words*:* A common use of the online resources was to look up words to find their equivalents in Spanish: "How do you say 'to become'? [Looks it up in the translator] OK, 'become'. I don't know. '*Hacerse*' (TA). Furthermore, one learner highlighted that an advantage of the online dictionary is that "[it] has the English to Spanish and Spanish to English right on the side, below, and you can easily go back and forth" (SR).

Verification of Meaning*:* The learners frequently showed signs of prior knowledge of a specific word, but decided to look it up to confirm its meaning: "Double check 'pay', '*pagar* [dictionary online]. It may not be right, '*pagar*'. OK, it's right" (TA).

Style Considerations*:* Certain learners were not only interested in achieving a more precise translation of their thought or idea from the L1 to the L2, but also in refining the writing style: "I was trying to find another word besides *destruir*' since I had used it like 20 times in my paper" (I).

4.2. Problematic Lexical Items

Data analyses show that problematic lexical items can be classified into four main categories: abstract and domain-specific words, collocations and fixed expressions, lexical items of multiple grammatical categories, and discourse markers (see Table 2).

The difficulty when dealing with problematic lexical items depended on the learners' proficiency levels: learners at the beginner and intermediate-low stages relied on lexical lookup strategies and had more difficulty when consulting the dictionary for abstract and multi-word expressions. In contrast, learners in the intermediate-mid and advanced levels were able to apply semantic lookup strategies and were more successful when confronting the same items.

Abstract and Domain-specific Words: Slight variations of meaning caused by the abstract nature of an item or by the specificity of its use confounded the choice between various denotations of the same lexical item. In the case of 'widowhood', which is translated as '*viudez*' or '*viudedad*' in the

bilingual dictionary, learners were unable to distinguish the difference between the two, basing their choice on intuition or previous knowledge: "I chose '*viudedad*' [because] I know similar words like '*edad*'… it is kind of familiar" (SR).

Similarly, lack of familiarity with a specific domain resulted in learners' random word selection: "How do you say 'county'? OK, [translator] '*provincial*', '*municipio*', '*comarca*', I'll use '*comarca*'" (TA).

Table 2. Categories of problematic lexical items

	Lexical items of the greatest difficulty
Abstract & Domain-specific words	wicker, fan, widowhood, flashes, turquoise, jumpsuits, squabbles, stools, nursemaids, gambling, thrill, county, finance
Collocations & fixed expressions	flipping open, snapping shut, far end, call away, make money
Lexical items of multiple grammatical categories	lounge, dress, change, flashes, reach, track, chance
Discourse markers	therefore, while, who, although, furthermore, in addition

Collocations and Fixed Expressions: The semantic relationships between the elements of a collocation (e.g., an old flame) or a fixed expression (e.g., the spitting image) cannot be fully transmitted into the L2 with a literal translation. These expressions may have a corresponding semantic unit in the target language, but learners are not able to identify it:

> [Student is searching for 'to call away'] I knew 'llamar' is to 'call'… and I knew 'afuera'… so I was OK… Oh, yeah, I will do that. (SR)

Lexical Items of Multiple Grammatical Categories: Items that fulfill different grammatical categories –noun, verb, adjective– in the L1 without a spelling change tend to confuse learners when looking up the corresponding entry in the L2. In the case of 'lounge', which in English can be both a noun and a verb, a learner recognized that: "I looked it up as a noun, and was given the option '*sala*', [but] it was supposed to be a verb, … so I kind of had to redo that one" (SR). Similarly, another subject was also confused about the word 'chance':

> I want to say something about winning, have a chance of winning. [Writes] **Todas las personas tienen** chance? I'll look that up. [Translator] '**Oportunidad**.' Just for a quick reference, I'm going to look up the word 'azar', because I thought that meant 'chance' but it may not be the 'chance' that I want. (TA)

Discourse Markers: Discourse markers–linking elements in a sentence or paragraphs in a discourse–are easily forgotten and confused due to their limited use and limited function.

> I always like to use transition words when I'm writing, but I don't know what they are by heart, or, from memory, so I have to look up in my dictionary. So [looking in the

dictionary] 'therefore' is 'por lo tanto'. Um, I hope I can remember that, [writes] **por lo tanto**. (TA)

I'm going to go to the Spanish dictionary online, and look at 'although' because this is one of the words that I always get confused. 'Although' and 'furthermore', is 'además' or 'aunque'. And it's 'aunque'. (TA)

4.3. Learners' Strategy Use

Learners' vocabulary search in online sources is normally assessed by its outcome; that is, whether they have successfully found or chosen the right word. In looking at the final product, however, teachers do not grasp the problems learners encounter, attributing their failure to linguistic limitations. Observing learners' dictionary use through verbal protocols and interviews, two types of strategies emerged: a) strategies related to vocabulary choice; and b) strategies related to dictionary use. Learners' individual stage of development and their familiarity with and knowledge of the dictionary influenced the type of lookup strategies learners used. Learners at the beginner and intermediate-low levels relied on lexical lookup strategies focusing on the form; in higher levels, they applied semantic lookup strategies considering the context of a word. Similarly, learners with a higher knowledge of dictionary features were more successful when employing lexical or semantic lookup strategies.

Strategies Related to Vocabulary Choice

As in L2 vocabulary acquisition, there are two dimensions that need to be considered: the form of a lexical entry in the mental lexicon and its context. In other words, learners display two strategies when choosing vocabulary by focusing on lexical form and/or the semantic value of the words.

A number of learners only paid attention to the lexical form without making a connection to the semantic value of the word, as evidenced when learners were working with collocations (e.g., flipping open). They looked up the words in the collocation as if they were separate entities, without understanding they needed to search for the combination of the words to obtain its equivalent in the L2. This is seen in the incorrect literal translation of 'flipping open and snapping shut' to '*voltean abierto y se rompen cerrado*', instead of the appropriate translation of the text, "*abrían y cerraban*". Other learners showed the capacity to move beyond the lexical form of the word, considering the context in which the word appeared: "I didn't know how to say 'flipping open,' so I just decided to say 'they open and close their fans'" (SR). However, in the case of single, monosemic (e.g., red/*rojo*) words, attention to lexical form resulted in a successful search.

Strategies Related to Dictionary Use

Apart from vocabulary choice, learners displayed other strategies that pertained to the use of the online resources. Data analyses revealed the following dictionary strategies.

<u>Second Word Strategy</u>: Researchers identified that by examining multi-word lexical items, learners not only focused on the first content (i.e., communicative value) word, but relied on the second or third word to get the meaning of an expression. During a writing revision, a learner reflected on why the expression 'to make money' was not accepted as '*hacer dinero*' and decided to check the second word 'money' to make a more appropriate choice.

> As a result, government makes a lot of money because casinos make money. Ok, to 'make' is 'hacer.' I just don't understand [the teacher's comment]. Government makes money, um. Ok, I'm going to look up 'hacer' in my dictionary. [reads] '*Fabricar*' '*producir*', '*to make*', '*to construct*', '*to build*', ok, '*to make him leave*', '*to have something done*', '*hacer algo*', '*hacer que*

otro haga.' What? *'To move'? No, 'hacerse de',* is that what I need to use?

I'm going to go to freetranslation.com, which I feel bad, just to see if I can go anywhere here. English to Spanish and then I'm going to write [writes] the government makes a lot of money because the casinos make a lot of money. Hit translations. [reads] *El gobierno hace dinero porque los casinos hacen dinero.* That's exactly what I wrote [laughs].

… I'm going to go back to 'to make' [looking it up 'money']. It can also be 'ganar' money, so I'm going to change 'hacer' to 'ganar', so that's what I'm going to do. (TA)

Online Translator Strategy: Free online translators became a tool to search for a combination of words, sentences, or parts of a text. Learners would type their search with the purpose of obtaining feedback on their performance in the L2 or an immediate translation of their words in the L1.

I usually write it first and do the best I can … and then, I put it into a translator to see if it understands what I've written ... I do that at the end too… and I use freetranslation.com for my accents. (SR)

Category Strategy: Familiarity with dictionary abbreviations and structure facilitated decisions about vocabulary choices. Knowing word categories helped a learner find the right L2 word, as in the case of 'entertaining,' which may be an adjective or a gerund in Spanish:

[writes] it's true, **es verdad** that los casinos and juegos de azar son muy divertidos

> [sighs] are very fun, and entretenimiento, entre… Let's see 'entertainment.' The games are fun and entertaining, [looks it up] OK, [sighs] 'entertaining', OK, 'entreteniendo' but, OK, casinos and games of chance are very fun and entertaining […] Synonyms? OK, 'entretenido.' (TA)

Context-based Strategy: Learners with developed or sophisticated dictionary-use skills paid attention to the examples provided for a particular word. These examples facilitated the recognition of the appropriate lexical item:

> Some people are not able to control their gambling habits. Maybe their habits of gambling? Yeah, I'm going to look up 'habits' because I do not know how that is in Spanish. 'Costumbres'? Oh, 'costumbres', 'hábito' 'tener la costumbre de.' I'm going to use 'hábito,' to be the habit of. That sounds better than 'costumbre' because it's not. Ok, did I look this up right? Because religion is 'hábito' so I'm going to use 'costumbres.' (TA)

Familiarity Strategy: A number of students were influenced by the familiarity of the form (e.g., cognates), or by the ending of the word when it reminded them of other words that share similar endings: "I liked '*ventilador*' [for 'fan'] … like ventilation is close to a cognate" (SR). Another student also reported:

> Usually when I look up a word in my dictionary, I read the first one to see if it sounds familiar to me. Because if it sounds familiar then it's more likely that I'd use it. (I)

5. Discussion

The results of both studies support the notion that the use of online dictionaries has a positive effect when making vocabulary choices in L2 writing, since learners were more successful in their choices if they consulted the dictionary (Hulstijn, 1993; Knight, 1994; Hill & Laufer, 2003; Loucky, 2005; Bruton, 2007; Peters, 2007). The researchers also observed learners' tendency to take advantage of online dictionary features such as interactivity and quick access (Pérez Torres & Sánchez Ramos, 2003), and hypertextuality in the form of links to online translators and verb conjugators (Chun & Plass, 1996; Hulstijn, Hollander, & Greidanus, 1996; Pérez Torres & Sánchez Ramos, 2003). A more extensive examination of the results led to a greater understanding of the three questions that framed both studies: (1) In what instances do FL learners consult online dictionaries while writing in Spanish? (2) What kinds of lexical items are problematic for FL learners while using online dictionaries? (3) What strategies do FL learners employ in their search for the appropriate meaning of lexical items?

First, the insight gained from the writing tasks and follow-up procedures corroborates the observations of learners' dictionary use suggested by Bishop (1998, 2000) with respect to L2 reading, and Cano Ginés (2004) with respect to monolingual dictionaries for FL learners. That is, learners did not employ the online dictionary for the sole purpose of finding the meaning of a concrete word, but instead referred to the dictionary with diverse intentions: (1) correction of grammatical errors, (2) clarification of verb conjugation, (3) spell checking, (4) looking up unknown words and (5) verification of meaning. In addition, learners in the present studies relied on the online dictionary when considering issues of precision and style in their L2 writing.

Second, our FL learners displayed diverse stages of regulation (Vygotsky, 1978) while writing in their L2. The application of lexical and semantic lookup strategies, therefore, seemed to depend on their proficiency level: learners in the self-regulation stage exhibited a greater ability to use both strategies. The learners' choice of strategies and ability to use them were clearly observed when the learners were coping with lexical items that

presented greater difficulty, such as collocations and fixed expressions, and lexical items of multiple grammatical categories (González, 1999). Hence, the general trend among the Spanish beginners and lower-intermediate learners confirmed their tendency to look more frequently at the lexical rather than the semantic level of the word. However, as Lantolf, Labarca and den Tuinder (1985) and Jiang (2004) have suggested, learners with a higher-intermediate and advanced proficiency level engaged in semantic lookup strategies when challenged by more complex L2 lexical items.

Finally, this article also aimed at exploring the strategies that FL learners employ in their search for the appropriate meaning of lexical items. The results agreed with previous research (Oxford, 1990; Gu & Johnson, 1996; Schmitt, 1997; Nation, 2001), which found that using a dictionary is an effective learning strategy, since learners who did so were more successful using appropriate vocabulary in their L2 writing assignments. However, a need to further investigate the particular dictionary strategies learners used in these assignments led the researchers to identify five main strategies, some of which support the findings in previous studies: (1) *second word strategy*, learners relied on the content word of multi-word expressions (Christianson, 1997; Barbe, 2001); (2) *online translator strategy*, learners used free online translators to search for word combinations; (3) *category strategy*, familiarity and knowledge of the dictionary facilitated vocabulary selection; (4) *context-based strategy*, learners paid attention to contextualized examples (Laufer & Hadar, 1997; Hunt & Beglar, 1998); and (5) *familiarity strategy*, word selection was based on familiarity with known words in the L1 and L2. Nevertheless, learners often failed to use lookup strategies effectively. Therefore, teaching learners specific dictionary use strategies would not only improve their ability to complete writing tasks, but also foster their vocabulary acquisition processes.

6. Pedagogical Implications

Understanding the difficulties that learners confront in their use of online dictionaries informs teachers of ways to modify their approach to teaching L2 writing. The teachers should focus on raising learners' awareness of the complex nature of the L2 lexicon (i.e., the form as well as semantic

knowledge of a word) and helping learners familiarize themselves with online reliable sources. Teachers, therefore, need to develop activities that target learners' problematic areas and that guide them to (1) discover the semantic layers of a word, (2) understand the notion of collocations and fixed expressions, (3) identify word categories, (4) increase knowledge of dictionary features and (5) select appropriate lookup strategies. Online sources, then, become a resource tool where the main purpose can be "to prevent or at least reduce communication conflicts which may arise from lexical deficit" (Hartmann, 1987, p. 21). Following Barbe's (2001) suggestions for traditional dictionaries and Pérez Torres and Sánchez Ramos's recommendations for electronic dictionaries, the researchers designed various sample activities to achieve the aforementioned objectives:

Activity 1: Exploring abbreviations

Objective: To familiarize students with commonly used abbreviations in an online dictionary.

Instructions: Students access an online dictionary and search for a specific entry (i.e. *echar*). In groups, students analyze and comment on the abbreviations used. Then, they make a list of common abbreviations and provide their meaning and an example.

Activity 2: One word, how many categories?

Objective: To help students distinguish different parts of speech and identify items that may fulfill various categories.

Instructions: First, students are given a list of sentences and asked to distinguish every part of speech. Then, they search for the same words in the sentences and check whether these words can fulfill different categories.

> e.g. Happy people like to whistle while they work.
>
> > a. Happy (adjective), people (noun), like (verb), to (preposition), whistle (verb), while (conjunction), they (pronoun), work (verb)

b. like (verb/preposition), whistle (verb/noun), work (verb/noun)

Activity 3: Idiomatic equivalents

Objectives: To help students understand how to translate and search for specific idioms or fixed expressions by using the information that dictionaries provide with respect to word combinations.

Instructions: Students access an online dictionary and work to translate several sentences which contain idiomatic and/or fixed expressions. After the activity, class discussion focuses on (1) how idioms can be correctly identified in each sentence; (2) where idioms appear in the online dictionary; and (3) which option provides a closer equivalent in the L2.

e.g. My girlfriend drives me up the wall.

In the twinkling of an eye, he disappeared.

Look out the window! It's raining cats and dogs.

7. Conclusion

We hope that the present article, together with the previous studies on dictionary use, will become a valuable contribution to future research; more specifically, to research regarding web tools that can foster learners' L2 vocabulary acquisition. The aim of our contribution was to observe the extent to which learners are able to use online dictionaries for L2 writing purposes. The overall picture emerging from the data illustrates that our findings corroborate those of dictionary use in L2 reading practices. The varied data collection techniques (i.e., verbal protocols and interviews) and the use of the Camtasia software provided information that was not based only on the text produced, but also on the processes observed and reflections made by the learners when on task.

In addition, targeting translation and revision tasks facilitated the identification of the situations that led learners to look up words, the types of lexical items that are problematic (especially for beginners and intermediate-low proficiency level learners) and the strategies learners utilize to solve a problem. Although the results cannot be generalized due to the small number of participants in both studies, they support other studies' findings on the use of dictionaries in L2 reading tasks as a cognitive strategy. However, it is essential to point out that using only two types of writing tasks is also a limitation; thus, future studies need to examine more closely the relationship between vocabulary learning strategies such as online dictionary use and L2 vocabulary acquisition during L2 writing tasks. The use of pre- and post-tests will enable researchers to measure whether any vocabulary gain has taken place during the experiment.

While the overall results are encouraging, we see the need for language instructors to instruct L2 learners explicitly in the effective use and selection of reliable web sources through the development of activities tailored to learners' needs. It is through this teaching approach that learners will fully benefit from these online resources and become more independent in their own learning. In sum, this article has provided three types of taxonomies: uses, difficulties and strategies regarding online dictionaries for L2 writing purposes. Although these findings are limited by the small-scale nature of the studies, they are a step toward understanding L2 vocabulary acquisition processes, the mapping of L2 vocabulary learning strategies and the inclusion of online resources in the classroom.

Notes

[1]Think-aloud protocol: a verbal protocol that takes place while the participant is performing a task; that is, the participant talks aloud while completing a task.

[2]Stimulated-recall protocol: a verbal protocol that is prompted by a stimulus such as viewing a video of the participant's performance of the task or an essay written by the participant.

[3]In the think-aloud protocols, bold text means that the learner wrote these words in the document; italics means that the learner was reading the document or the teacher's comments; and normal font means that the learner was speaking aloud while he/she was thinking.

References

Ard, J. (1982). The use of bilingual dictionaries by ESL students while writing. *ITL Review of Applied Linguistics, 58*, 1-27.

Asher, C., Chambers, G., & Hall, K. (1999). Dictionary use in MLF examinations in the GCSE: How schools are meeting the challenge. *Language Learning Journal*, *19*, 28-32.

Aust, R., Kelley, M. J., & Roby, W. (1993). The use of hyper-reference and conventional dictionaries. *Educational Technology Research & Development*, *41*, 63-73.

Barbe, K. (2001). Learning to use bilingual dictionaries successfully. *Teaching German, 34*, 66-75.

Barnes, A., Hunt, M., & Powell, B. (1999). Dictionary use in the teaching and examining of MLFs at GCSE. *Language Learning Journal*, *19*, 19-27.

Baxter, J. (1980). The dictionary and vocabulary behavior: A single word or a handful? *TESOL Quarterly, 14*, 325-336.

Bishop, G. (1998). Research into the use being made of bilingual dictionaries by language learners. *Language Learning Journal*, *18*, 3-8.

Bishop, G. (2000). Dictionaries, examinations, and stress. *Language Learning Journal*, *21*, 57-65.

Bruton, A. (2007). Vocabulary learning from dictionary referencing and language feedback in EFL Translational Writing. *Language Teaching Research*, *11*, 413-431.

Bruton, A., & Broca, A. (1997).   Dictionary use and feedback in composition writing, and learning. In J. Field, A. Graham, E. Griffiths,

and K. Head (Eds.), *Teachers Develop Teachers' Research II* (pp. 194-207). Whitstable, UK: IATEFL.

Bruton, A., & Broca, A. (2004). Acquiring and using dictionaries in state secondary schools. *English Teaching Professional, 31,* 16-17.

Cano Ginés, A. (2004). El tratamiento del léxico en los diccionarios de ELE. *Carabela. Monográfico: La enseñanza de léxico en español como segunda lengua/lengua extranjera*, *56,* 69-97.

Chamot, A. U. (2001). The role of learning strategies in second language acquisition. In M. P. Breen (Ed.), *Learner contributions to language learning* (pp. 24-44). Essex: Pearson Education.

Chun, D. M., & Plass. J. L. (1996). Effects of multimedia annotations on vocabulary acquisition. *Modern Language Journal, 80,* 183-212.

Cohen, A. D. (1998). *Strategies in learning and using a second language.* London: Longman.

Cohen, A. D. (2001). *The learner's side of foreign language learning: Where do styles, strategies, and tasks meet?* Unpublished manuscript, University of Minnesota.

Christianson, K. (1997). Dictionary use by EFL writers: What really happens. *Journal of Second Language Writing*, *6,* 23-43.

Ellis, R. (1994). *The study of second language acquisition.* Oxford: Oxford University Press.

Fan, M. Y. (2003). Frequency of use, perceived usefulness, and actual usefulness of second language vocabulary strategies: A study of Hong Kong learners. *Modern Language Journal, 87,* 222-241.

González, O. (1999). Building vocabulary: Dictionary consultation and the ESL student. *Journal of Adolescent and Adult Literacy, 43,* 264-270.

Graves, M. (1987). The roles of instruction in fostering vocabulary development. In M. G. McKeown & M. E. Curtis (Eds.), *The Nature of Vocabulary Acquisition* (pp. 167-184). Hillsdale, NJ: Lawrence Erlbaum.

Gu, P. Y. (2003) Vocabulary learning in a second language: Person, task, context and strategies. *TESL-EJ, 7*. Retrieved December 20, 2005, from http://tesl-ej.org/ej26/a4.html

Gu, P. Y. (2005). Learning strategies: Prototypical core and dimensions of variation. Retrieved December 12, 2005, from http://www.crie..org.nz/research_paper/Peter_Gu.pdf

Gu, P. Y., & Johnson, R. K. (1996). Vocabulary learning strategies and language learning outcomes. *Language Learning, 46*, 643-679.

Hartmann, R. R. K. (1983). *Lexicography: Principles and practice*. London: Academic Press.

Hartmann, R. R. K. (1987). Four perspectives on dictionary use: A critical review of research methods. In A. Cowie (Ed.), *The dictionary and the language learner* (pp. 11-28). Tubingen: Max Niemeyer Verlag.

Hartmann, R. R. K. (1991). What's the use of learners' dictionaries? *Institute of Language in Education Journal, 8*, 73-83.

Hill, M., & Laufer, B. (2003). Type of task, time-on-task, and electronic dictionaries in incidental vocabulary acquisition. *IRAL, 41*, 87-106.

Hulstijn, J. H. (1993). When do foreign-language readers look up the meaning of unfamiliar words? The influence of task and learner variables. *The Modern Language Journal, 77*, 139-147.

Hulstijn, J. H., Hollander, M., & Greidanus, T. (1996). Incidental vocabulary learning by advanced foreign language students: The influence of marginal glosses, dictionary use, and reoccurrence of unknown words. *The Modern Language Journal, 80*, 327-339.

Hunt, A., & Beglar, D. (1998). Current research and practice in teaching vocabulary. Retrieved December 20, 2005, from http://www.jalt-publications.org/tlt/files/98/jan/hunt.html

Jiang, N. (2004). Semantic transfer and development in adult L2 vocabulary acquisition. In P. Bogaards & B. Laufer (Eds.), *Vocabulary in a second language* (pp. 101-26). The Netherlands: John Benjamins B. V.

Jones, F. R. (1995). Learning an alien lexicon: A teach-yourself case study. *Second Language Research, 11,* 95-111.

Knight, S. (1994). Dictionary use while reading: The effects on comprehension and vocabulary acquisition for students of different verbal abilities. *The Modern Language Journal, 78*, 285-299.

Lantolf, J. P., Labarca, A. & den Tuinder, J. (1985). Strategies for accessing bilingual dictionaries: A question of regulation. *Hispania, 68*, 858-864.

Laufer, B., & Hadar, L. (1997). Assessing the effectiveness of monolingual, bilingual, and 'bilingualised' dictionaries in the comprehension and production of new words. *The Modern Language Journal, 81*, 189-196.

Laufer, B., & Hill, M. (2000). What lexical information do L2 learners select in a CALL dictionary and how does it affect word retention? *Language Learning & Technology, 3*, 58-76.

Lawson, M. J., & Hogben, D. (1996). The vocabulary-learning strategies of foreign-language students. *Language Learning, 46,* 101-135.

Loucky, J. P. (2005). Combining the benefits of electronic and online dictionaries with CALL web sites to produce effective and enjoyable vocabulary and language learning lessons. *Computer Assisted Language Learning, 18*, 389-416.

Luppescu, S., & Day, R. R. (1993). Reading, dictionaries, and vocabulary learning. *Language Learning, 43*, 263-287.

Macaro, E. (2005). Fourteen features of a language learner strategy. Retrieved May 12, 2005, from http://www.crie.org.nz/ research_paper /1Ernesto_Macaro_WP4.pdf

Meara, P., & English, F. (1987). *Lexical errors and learners' dictionaries.* London: Birkbeck College.

Nation, P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.

Oxford, R.L. (1990). *Language learning strategies: What every teacher should know*. Boston: Newbury House.

Pérez Torres, I., & Sánchez Ramos, M. M. (2003). Fostering vocabulary acquisition through self-learning tools and electronic dictionaries. *The GRETA Magazine, 10*, 41-49.

Peters, E. (2007). Manipulating L2 learners' online dictionary use and its effect on L2 word retention. *Language Learning & Technology, 11*, 36-58.

Sanaoui, R. (1995). Adult learner's approaches learning vocabulary in second languages. *The Modern Language Journal, 79*, 15-28.

Schmitt, N. (1997). Vocabulary learning strategies. In N. Schmitt & M. McCarthy (Eds.), *Vocabulary: description, acquisition and pedagogy* (pp. 199-228). Cambridge: Cambridge University Press.

Scholfield, P. (1982). Using the English dictionary for comprehension. *TESOL Quarterly, 16*, 185-194.

Segler, T. M., Pain, H., & Sorace, A. (2002). Second language vocabulary acquisition and learning strategies in ICALL environments. *Computer Assisted Language Learning,15,* 409-422.

Summers, D. (1988). The role of dictionaries in language learning. In R. Carter & M. McCarthy (Eds.), *Vocabulary and language teaching* (pp. 111-125). London: Longman.

Summers, D. (1995). Vocabulary learning: Do dictionaries really help? *The Language Teacher,19, 25-28.*

Tall, G., & Hurnam, J. (2000). Using a dictionary in a written French examination: The students' experience. *Language Learning Journal, 21*, 50-56.

Thompson, G. (1987). Using bilingual dictionaries. *ELT Journal, 41*, 282-286.

Vygotsky, L. S. (1978). *Mind in society. The development of higher psychological processes.* Cambridge: Harvard University Press.

Williams, M., & Burden, R. L. (1997). *Psychology for language teachers.* Cambridge: Cambridge University Press.