Vocabulary and reading:
teaching procedures in the ESP classroom

Celso Henrique Soufen TUMOLO
Universidade Federal de Santa Catarina

Abstract: *This article presents a discussion of the relationship of reciprocal causation between vocabulary and reading, as well as the findings and conclusions of a research carried out with three ESP/EAP teachers to investigate the procedures used for vocabulary instruction in the reading classroom. The focus of the investigation was on three steps considered essential for vocabulary learning: text selection, procedures for vocabulary presentation and for vocabulary retention. The results showed that, concerning text selection, topic familiarity and authenticity of the text were considered the most important, with teachers having similar views as to topic familiarity, but different views as to authenticity. In terms of the procedures for vocabulary presentation, several activities were used, mostly following the top-down approach to reading. And in terms of the procedures for memorization, very little was done to assist memorization as compared to the possibilities presented in the specialized literature.*
Key-words: *vocabulary; reading; teaching procedures; ESP courses.*

INTRODUCTION

Vocabulary has had its ebb and flow: it had its prime time in the 1930s through 1950s, when a conference on vocabulary selection as a part of the teaching of English was held in New York, attended by such scholars as Michael West, author of the influential book *A General Service List of English Words*, published in 1936 and revised in 1953; it also had its neglect, being considered the "neglected aspect of language learning" (Meara, 1980); and, again, more recently it has become "an area of growing research and publication" (Channel, 1988).

The relationship of vocabulary knowledge and reading has also been a growing area of research. It has been described as a relationship of "reciprocal causation" (Stanovich, cited in Harley, 1995), meaning that reading comprehension relies on

prior vocabulary knowledge, but also that reading is a major source of new vocabulary learning. What teaching procedures can be used for the development of vocabulary having the text as the source?

This article reports the discussion, findings, and conclusions of a research carried out by Tumolo (1999) aimed at investigating the procedures for vocabulary instruction EFL teachers have used in their ESP/EAP reading courses. Although it was carried out in 1998 and 1999, the discussion remains pertinent to date, since ESP/EAP reading courses in Brazil today still tend to be under the same influence as they were then, that is, the influence of the approach whose emphasis Scaramucci (1995) described as constrained to the teaching of strategies for lexical inference with focus on affixes, cognates, textual organizing elements (connectives and references), aiming at compensating for the poor linguistic knowledge of the reader, particularly vocabulary knowledge, and on activities to activate the reader's background knowledge.

The role of vocabulary knowledge in reading

The different models proposed to account for reading comprehension assign different importance to vocabulary knowledge. In Gough's (1972) bottom-up model, vocabulary knowledge was considered important, since reading was mostly the result of a word by word decoding process, followed by the identification of each word's syntactic and semantic features. In Goodman's (1976) top-down model, reading was a psycholinguistic guessing game where meaning could be cued by the printed words, thus activating higher order sources of information, based on the reader's knowledge of both the subject matter and the world. Vocabulary knowledge became less important.

Rumelhart (1977) proposed an interactive model, where reading involves the application of all sources of information:

visual, orthographic, lexical, semantic, syntactic as well as schematic knowledge. In the case of second language reading, Eskey (1988) also proposed an interactive model, involving top-down and bottom-up processing, which can be characterized as the flow of information coming from the text and also from the reader, i.e., both the text and the reader contribute to the construction of meaning. In his interactive model, vocabulary knowledge is considered essential, since bottom-up processing has its contribution to reading comprehension. Vocabulary knowledge is, thus, seen as important for reading.

The role of reading for vocabulary knowledge

Researchers have had different positions concerning vocabulary learning through reading. Krashen (1989), following his natural approach, claims that vocabulary learning is "most efficiently attained by comprehensible input in the form of reading", and that "vocabulary and spelling are acquired in fundamentally the same way as the rest of language is acquired" (p.440), which means focusing on the message, on the meaning of the text. Vocabulary learning is, therefore, the result of implicit or incidental learning through reading.

On the other hand, Brown (1994) claims that the natural approaches which advocate "the 'absorption' of grammar and vocabulary with no overt attention whatsoever to language forms went too far" (p.369). In corroboration with that position, Sökmen (1997) has provided evidence that implicit vocabulary instruction alone will not necessarily lead to learning, and cites studies that point to the "ineffectiveness of just using implicit vocabulary instruction and the need to accompany it with a much stronger word level or bottom up approach than had been previously advocated" (p.239). The author advocates systematic instruction, recognizing that it is "worthwhile to add explicit

vocabulary to the usual inferring activities in the second language classroom" (p.239).

Although natural exposure may lead to language learning, as suggested by Krashen within his natural approach, there seems to be sufficient evidence that it is not enough. A combination of direct and indirect strategies for vocabulary learning has been shown to be the most effective (Gu and Johnson, 1996), and teachers might use both direct and indirect instructions to assist the learners in their process of vocabulary learning, that is, a balance between implicit and explicit, indirect and direct, teaching procedures for learning a foreign language.

Vocabulary and memorization

Language learning involves memorization, i.e., the storage of the new information in memory (McLaughlin, 1978; Schmitt, 1997), and researchers have advocated different modes of committing information to memory.

Being consistent with his natural approach for second language learning, Krashen (1982) claims that "vocabulary naturally acquired is more persistent and more likely to be remembered than is vocabulary that is explicitly learned through memorization or dictionary use" (p.80).

The natural acquisition of second language vocabulary may lead to more persistent storage and more likelihood of storage and retrieval as Krashen has claimed. However, as to foreign language learning, it is not so simple a question. Remembering is an aspect of memorization. Memorizing foreign language vocabulary is not simple, especially due to the very infrequent opportunities for contact with the language.

Krashen seems to ignore the research carried out on memorization, which challenges his view. Stevick (1976) claims that mere exposure to input is not enough because there is a period of time that the input is available for re-

examination, after which students should not be expected to remember it unless they did "more with it than simply heard it" (p.13).

Stevick (1982) has found that new input stays in the short-term memory (STM) for a short time, about 20 to 30 seconds without being repeated. The amount of work the learner's mind does on the new input will determine whether or not it goes to long-term memory (LTM). Whether the new input is committed to the LTM, says the author, is "pretty much a matter of frequency and intensity" (p.30), that is, how many times and how hard the input is worked upon.

The author claims that the process of encountering and reencountering a word will lead to quicker and more accurate responses to them. He argues that the interval of successive occurrences should be well balanced so as to activate the neurochemical image and trace, and stresses that intervals cannot be too short once competence will rely on the echo of recent words, or too long that the learned words will be like completely new words to the learner.

In addition to balanced intervals, meaning processing plays a role in memorization. Craik and Lockhart (l972) discuss the levels of external information processing – word, sound, images and smell – that lead to the retention in memory. They propose what they call 'depth of processing', where the early stages focus on the physical features of the input whereas the later stages are related to the association of this information to the background information of the learner. That means that a greater depth of processing implies a greater semantic and cognitive analysis.

Baddeley (1990) characterizes the relationship between human learning and memory as dependent on organization. Based on his research and review of different studies in the area, the author concludes that there is enough evidence to indicate that "the more organized the material, the easier it is to learn, that subjects spontaneously tend to impose organization on random material, and finally that explicit

instruction to organize enhances learning" (p.199).

Thus, since learning involves commitment of information to memory, and research in the field of memorization has shown the importance of review of new information at specific time intervals, of analysis, deep processing and association, as well as of organization of the material to be learned, there seems to be sufficient evidence that vocabulary instruction requires much more than just exposure to the new words – it requires systematization. This means teachers should design their courses and procedures considering all these aspects.

Procedures for vocabulary instruction

Taking into consideration what has been discussed in terms of the role played by vocabulary for reading and the contribution of reading as a source of vocabulary learning, as well as the importance of direct instruction, teachers should consider adopting instructional procedures in their ESP/EAP reading courses.

Based on the five essential steps for learning new words proposed by Brown and Payne (1994, cited in Hatch and Brown, 1995), ESP/EAP teachers might consider, in their procedures for vocabulary instruction, the following steps: 1) the source of presentation of the new words; 2) the activities done for getting the meaning of the words; 3) work done for creation of memory links and retention of the word form and meaning.

The procedures for vocabulary instruction may occur in all the steps when the teacher: 1) selects the text, in terms of familiar topic to allow for top-down processing for inference of meaning of new words, and also in terms of low new word density[1] to allow for bottom-up processing contributing to

---

[1] New word density is defined as the ratio of unknown words to the total length of a text. (Nation and Coady, 1988)

the comprehension of new words; 2) helps the students get the meaning of new words, and extend the meaning of familiar words; and 3) takes advantage of memorization techniques to assist retention, with the systematization of vocabulary.

The contribution of research and/or aspects involved in the three steps aforementioned for vocabulary instruction is presented and discussed below.

Source of presentation: text selection

Text selection has been an area of debate and research in the field of EFL pedagogy. ESP/EAP teachers have received the influence of the Communicative Movement towards selecting authentic texts for the students, which has become imperative for language classrooms (Day and Bamford, 1998).

The issue of using authentic texts for language teaching was discussed by Widdowson (1978), who, upon evaluating the authenticity of texts used by teachers, distinguished three types of text: extracts, simplified versions and simple accounts. Extracts are pieces of genuine and authentic discourse, real instances of use. The author points out problems in their use, since they are extracted from bigger communicative units, and, then, introduced in an isolated unnatural way, which, to him, reduces their authenticity.

Simplified versions are derived from texts by a process of lexical and syntactic adjustment to the reader's linguistic competence, in which the focus is on the language, not on the discourse. It is not a "genuine discourse, it is a contrivance for teaching language" (p. 89). Simple accounts refer to a real reformulation of the propositional and illocutionary development, which presents information in a totally new discourse, addressed to specific readers with specific background knowledge. Simple accounts are "genuine instances of discourse, designed to meet a communicative purpose, directed at people playing their roles in the normal

social context" (p.89).

Adopting authentic texts for language classrooms may not be a solution in an ESP classroom, but a problem. Authentic material can be those "impossible or difficult for language learners to understand" (Day and Bamford, 1998, p.55), if not considered the appropriate level of linguistic difficulty in comparison to the students' proficiency level.

This is confirmed in other studies. Ridgway (1997), for example, based on his research findings that show the importance of text selection of a specific subject area and at an appropriate level, claims that the use of topic-specific knowledge in reading comprehension as a compensatory strategy depends on the reader's linguistic proficiency in relation to the text: if the reader's linguistic level is below the threshold level, the compensatory strategy short-circuits, that is, the "poor linguistic proficiency in relation to the text will prevent the reader from making any use of their background knowledge in the interpretation of the text" (p.155).

Scaramucci (1995) found that poor linguistic knowledge in relation to the text caused beginners and intermediate readers to be confused about similar words, have difficulties in lexical inference, and have a distorted meaning construction due to the great amount of incorrect guesses and non-guessed word. The author also found that automatic processing required for comprehension fails, since readers have to adopt a more controlled word decoding to be able to read, involving all the resources and resulting in an overload of the processing capacity, which prevents them from using the resources for the construction of meaning of the text or for processing at a higher level.

In all the cases, poor linguistic knowledge in comparison to the demands of the text has been shown to prevent the reader from coping with the text, which is the only way possible to infer the meaning of unknown words and, eventually, learn vocabulary. The pursuit should, thus, be

selecting texts suitable for language learners, chosen based on their linguistic knowledge.

This pursuit does not go against the proposition of selecting authentic texts. Day and Bamford (1998) comment that there is still a confusion concerning the definition of authentic, and claiming that "simplified and authentic are not mutually exclusive opposites" (p.59), they propose a fusion of authenticity and simplicity, where texts "combine the desired features of authentic texts (their authenticity) and simplified texts (their simplicity) – in other words, texts that are both authentic and appropriately simple" (p.58).

The authors propose what they call language learner literature, material especially written for second language learners, which should have communicative intent, being a "fully realized, complete-in-itself act of communication between author and audience" (p.64), and be written for an identifiable audience of second language learners, therefore, authentic. At the same time, it should be appropriately simple in language and concept, respecting the special characteristics of readers of limited language ability and unfamiliar with concepts and topics common in the target language.

In sum, using authentic texts without considering the reader's linguistic knowledge may cause readers to have too many doubts, as well as too much distraction, and may force them to focus on the linguistic code with a consequent overload on memory, hence hindering the reading task. When using texts difficult for readers in terms of high new word density, the problems arising are: the first is that readers may not have the linguistic knowledge for bottom-up information processing; second, readers may not have enough automatic word recognition, hindering comprehension because of the limitations in working memory resources (Tomitch, 1996); third, higher-order knowledge cannot be applied to compensate for the poor linguistic knowledge (Ridgway, 1997); fourth, students may not be able to make use of contextual clues for meaning inference when the target

word is surrounded by unknown or only partially known words (Gairns and Redman, 1986); and fifth, students may distort meaning construction resulting from insufficient lexical competence (Scaramucci, 1995).

Thus, when selecting a text, teachers should, in my view, introduce texts only upon assessing students' linguistic proficiency and their progress over the course. Widdowson's simple accounts addressed to an audience of second language learners, or Day and Bamford's language learner literature may be possible alternatives in terms of more adequate text selection, since they allow for less distraction, more automatic processing, less distorted meaning construction, and fewer short-circuit occurrences in the compensatory strategy use, all contributing to reading comprehension as well as to new word meaning inference, favorable ground to vocabulary learning.

Getting the meaning of the new words

Vocabulary may be presented: a) inside context, that is, in texts; b) outside context in lists, glosses and pre-reading or post-reading activities; and c) both inside and outside context.

Presenting vocabulary in contexts allows for the learner to retain not just the referential meaning of the words, but also to retain "the syntactic, pragmatic, and even the emotional information from their context" (Gu and Johnson, 1996, p.646). On the other hand, it has not been demonstrated that the "information learners obtain from meeting words in a variety of contexts is more beneficial, either in terms of knowledge of forms or meanings of lexical items, than either translation or simply looking up the words in a dictionary" (Carter and McCarthy, 1988, p.15). Thus, a combination of both modes of vocabulary presentation may be the most suitable and efficient procedure to be adopted, i.e., presentation of words both inside and outside contexts, in such a way that teachers can capitalize on both modes.

Gairns and Redman (1986) suggest some procedures the teacher may use to present meaning or help students get the meaning of new words. They are: visual techniques, verbal techniques, translation, contextual guesswork and dictionary use. Visual techniques include flashcards, photographs, blackboard drawings, wallcharts and realia (real objects), and are particularly useful to present items of vocabulary such as food, furniture, professions, places and activities. Verbal techniques, on the other hand, are useful to explain more abstract concepts and include illustrative situations, synonymy and definition, contrasts and opposites, scales and examples. Translations can be a very effective way of conveying meaning, saving time spent on unsuccessful explanations. Contextual guesswork involves the use of context to derive an idea of the unknown meaning and are guided by: a) topic and title; b) grammatical structure; c) punctuation; d) parallelism; e) anaphora; and f) other words in the redundancy of discourse.

Other researchers add more information concerning guesswork. Clarke and Silberstein (1977, cited in Nattinger, 1988) provide types of contextual clues to help find the meaning of an unfamiliar word: a) synonym in apposition; b) antonym; c) cause and effect; d) association between an object and its purpose or use; e) description; f) example; and g) word morphology through lists of stems and affixes. Nation and Coady (1988), in turn, suggest a useful five-step strategy to help teachers assist their students in getting the meaning from context: 1) find the part of speech of the unknown word; 2) look at the immediate context and simplify it if necessary; 3) look at the wider context, pursuing the relationship between the clause and the unknown word; 4) guess the meaning; and 5) check whether the guess is correct.

As for dictionary use, the last procedure for meaning presentation in their list, Gairns and Redman (1986) point out the advantage that it provides valuable support as a backup to contextual guesswork, and gives the learner considerable

autonomy to continue learning outside the classroom. Corroborating the authors' view, Summers (1988, p.116) claims that dictionary use provides students with "further exposures for the word in other contexts, with different collocates and constructions, by making the student think about the word in relation both to the passage being read and the dictionary information". Monolingual dictionary, for the author, is an important tool because it presents students with the meaning of the word within its specific context, and also the general meaning of the word.

Researchers have, thus, shown the many possibilities for presenting language learners with new vocabulary. ESP teachers may choose any combination of them as vocabulary instructional procedures in their classes.

Memorization procedures to assist the retention of words

Systematization and organization for retention of new information in memory may be helpful procedures in language teaching, since research on memory seems to provide evidence that mere exposure to input is not enough, and that more should be done with the new input than simply being exposed to it. This is particularly true for foreign language learning in that the exposure to the new input is usually very infrequent.

In her seminal book on language learning strategies, Oxford (1990) presents techniques for the retention of language input: a) grouping language material into meaningful units; b) associating new language information to concepts already in memory; c) placing new words into a context, such as meaningful sentences; d) using semantic mapping; e) using keywords with auditory and/or visual links; f) representing sounds in memory for link with a target language word; g) reviewing the target language material in carefully spaced intervals; h) acting out a new target language expression; and i) using mechanical techniques, such as writing words on cards.

Schmitt (1997) adds some suggestions for memory strategies that have, according to the author, been shown effective: a) pictures - pairing L2 words with pictures; b) imagery - associating L2 words with images created by the learner, usually associated with a personal experience; c) related words, with sense relationship, such as synonymy, antonymy, hyponymy; d) unrelated words that rhyme; e) grouping of words that belong to each meaning category, such as animals, etc; f) word's orthographical or phonological form; g) structural analysis such as word's affixes; h) paraphrasing, since it improves recall of the word due to the manipulation effort involved; i) analysis of the individual words of the multi-word chunks; j) physical action; and k) semantic feature grids that illustrate the meaning or collocational differences between sets of similar words.

As it has been argued, retention of new information will profit from systematization and organization. ESP/EAP teachers have available all the techniques and strategies presented to enhance retention.

THE STUDY

Based on the three steps for vocabulary instruction discussed above, that is, the source of presentation of the new words, the activities carried out for getting the meaning of the words, and work done for the creation of memory links and retention of word form and meaning, the study on which this article is based aimed at investigating the following research questions: 1) what criteria do ESP teachers use to select the texts for their classes?; 2) what procedures do the teachers use to present the meaning of planned and unplanned new vocabulary?; and 3) what procedures do the teachers use to assist the retention of the new words, both planned and unplanned words?

Method and findings

The research involved three ESP reading teachers from Centro de Comunicação e Expressão, UFSC, Florianópolis, SC. One taught an extra-curricular course, and two curricular courses. They were selected randomly, after considering some ESP reading teachers' availability, schedule, agreement and desire to take part in the research.

Data collection took place during second term in 1998. All the classes were recorded, except for one teacher's classes, since recording was not allowed by the teacher. In this case, note-taking was more detailed. There was an interview with each of the three teachers aimed at answering the research question concerning the criteria used for text selection. It was a semi-structured interview (Cohen, 1998),[2] which sought to investigate whether or not the teachers considered new word density when choosing a text. All three interviews were recorded.

Criteria teachers use to select the texts

The first research question, What criteria do teachers use to select the texts they use in the ESP reading classroom?, elicited topic familiarity and authenticity, that is, topic familiarity and authenticity were considered the most important by all the three teachers. Thus, they are the two criteria to be presented in detail and discussed in relation to vocabulary instruction.

The three teachers were aware that topic familiarity was a way of activating students' background knowledge to

---

[2]   Cohen (1998) defines a semi-structured interview as a prompt through which the interviewer requests certain information from respondents whose exact shape is not predetermined. It allows researcher and learners to "pursue topics of interest which may not have been foreseen when the questions were originally drawn up" (p.28).

facilitate comprehension. This is considered a compensatory strategy (Ridgway, 1997): readers use their background knowledge to compensate for "linguistic shortcomings, in order to arrive at a meaning" (p.160). Since arriving at meanings by using background knowledge may result in vocabulary learning, choosing familiar subjects is a useful procedure in vocabulary instruction.

Authenticity was a reference for the ESP teachers regarding text selection. They either used authentic texts or refused to use them. As discussed above, the problem with the use of authentic materials for second language reading is not authenticity, but the appropriateness of the texts, in terms of new word density, to the students' level of proficiency, i.e., the threshold level of linguistic knowledge demanded by the reading task in relation to the reader's linguistic proficiency.

This appropriateness may be overlooked in ESP/EAP courses when dealing with low proficient students. One of the teachers seemed to be ignoring that aspect. When asked in the interview whether or not she considered new word density as an item for text selection, she answered that she does not exclude a text because of the new word density, that she does not bother about that, and that she even considers authentic texts "a bit of a challenge" (teacher, in the interview). Following the discussion presented above, this 'bit of a challenge' may turn out to be a major problem for some students and a hindrance for vocabulary development.

Another teacher mentioned that, although she doses by balancing difficult texts (to present some challenge) with easier ones (to please weaker students), she does not really bother about new word density since her students, usually medical students, are "intellectually privileged people" (teacher, in the interview), receiving the best grades in all tests making up the university entrance examination (vestibular).

Unlike the others, one teacher chooses not to use authentic texts, but simplified versions[3] of originals for his level 1 students. He selected a textbook within which the texts were simplified versions because they introduced the structure and lexical complexities of the language in a gradual way i.e., to build "a sort of basis, a sort of bridge" (teacher, in the interview) to authentic texts. He stressed it is a more adequate choice for level one students: "THAT is the way" (teacher, in the interview).

The teacher noted that, by using these simplified texts, he could control the complexity of the linguistic information – both lexical and grammatical: "the fact that the readings were not so difficult, yes difficult, THAT is the word…I think it helped them" (teacher, in the interview). Thus, aiming at keeping a small gap between the linguistic knowledge demanded by the reading task and his students' actual linguistic knowledge, the teacher chose simple texts so as to help his students in the development of their linguistic knowledge to reach a threshold level for other texts.

In sum, concerning text selection, topic familiarity and authenticity were the most important criteria mentioned by the three teachers for text selection. Topic familiarity may help beginning and intermediate students to cope with reading by the use of compensatory strategies, resulting in better comprehension and better guesswork, making it possible for vocabulary learning.

Authenticity may overshadow, and in my view usually it does, the issue of appropriateness of the text in relation to the students' proficiency level. Considering the students' linguistic knowledge, while choosing texts, in order to make sure the new word density remains low, is an essential

---

[3]   The word simplified was used by the teacher, but its use is not necessarily related to the distinction, proposed by Widdowson (1978), of extracts, simplified versions and simple accounts discussed in this article.

procedure for vocabulary instruction since it allows for: a) bottom-up information processing with a consequent better comprehension of the whole text, resulting in the improvement of guesses of unknown words, and enhancing the likelihood of retention; and b) the reduction in occurrences of word skipping resulting in increased word learning, since the learner who adopts the strategy of skipping new words and grasping a general idea of the text content is "less likely to learn the word because he or she was able to comprehend the text without knowing the word" (Nation and Coady, 1988, p.101).

Procedures to present the meaning of new vocabulary

As to the second research question, What procedures do teachers use to present the meaning of planned and unplanned new vocabulary?, it was found that, for unplanned vocabulary, teachers used a) schemata activation and the corresponding words; b) contextual guesswork, translation and explanation; c) affixes; and d) dictionary use. The procedures used by the three teachers for meaning presentation of unplanned vocabulary were mostly based on the strategies suggested within the top-down oriented reading courses.

One teacher oriented her students to engage in the reading of the text to try to guess the meaning of unknown words by using contextual clues. Her students, however, used the dictionary frequently, which may suggest either that they did not know how to make use of context to infer meaning, or that contextual clues were not enough for the inference.

In fact, although guessing word meaning by the use of contextual clues is a very useful procedure for text reading, it may be hindered by factors such as few encounters with specific words, and contextual clues that are either misleading, intrinsically unhelpful or beyond the learner's linguistic

knowledge (Harley et al, 1996). Also, it may result in wrong guesses, since correct guesses for high proficient readers correspond to no more than 60% of the total, while for low proficient readers, they correspond to no more than 25% (Morrison, 1994, cited in Morrison, 1996).

Another teacher assisted his students by identifying sources of problems, presenting the meaning of unplanned vocabulary, helping the students find and make use of the contextual clues to infer meaning, or possible meanings, and using synonyms or translations to Portuguese.

During the interview, the teacher seemed to be excusing himself for using translation as a means of presenting vocabulary meaning. Translation can be a very effective way of conveying meaning and is not necessarily a disadvantage if compared to providing definitions or synonyms, since the latter procedures may have the disadvantage of, for example, conveying inexact meanings (Gairns and Redman, 1986).

As for planned vocabulary, the procedures provided within the units used by the three teachers to assist the presentation of planned vocabulary were: a) guessing-meaning-from-context activities; b) scrambled words; c) glossaries; d) matching opposites; e) fill-in-the-blanks activities; f) making sense of sentences; and g) definitions to find words in the context.

Although helpful, a recurrent problem found with the activities was the inadequate choice of the words to be worked upon, since most of them were either infrequent, cognate, field-specific, or used in Portuguese, as is the case of the words used in computer science.

Procedures for vocabulary retention

As to the third research question, What procedures do teachers use to assist the retention of the newly learned words?, it was found, for unplanned vocabulary, that associations were not used by the teachers, except for

association with the translation equivalents; semantic analysis was very rarely used; reviewing of new words was used, but not systematically, that is, without observing the intervals and repetition that Stevick has shown to be essential; and natural reviewing of topic-related words was possible since different texts with the same topic were used.

In terms of planned vocabulary, matching opposites and fill-in-the-blanks activities were provided in the books. New opportunities for use of the new words were provided in the form of fill-in-the-blanks activities within the units used by all of the teachers.

It can be concluded, from the findings, that teachers capitalized very little on the principles of memorization, and exploited only few of the possibilities suggested in the specific literature in the area of vocabulary teaching and learning. The author of the book used by one teacher also neglected the importance of activities designed for vocabulary retention. Most activities within the units were for getting the meaning and making sense of sentences, without activities to assist memorization.

Final remarks

Some conclusions may be drawn based on the research carried out on the procedures used for vocabulary instruction within the ESP/EAP reading courses observed as to: 1) the source of presentation of the new words, i.e., the text; 2) the activities carried out for getting the meaning of the new words; and 3) the work done for the creation of a memory link and retention of the word form and meaning.

In case of the source of presentation of new vocabulary, the two main criteria for text selection used were topic familiarity and authenticity. Topic familiarity was an important criterion for reading, since it allows for the activation of background knowledge. Although the choice of familiar topics cannot be considered a procedure for vocabulary

teaching, we have seen that compensatory strategies may come into play when the topic is familiar for the readers, helping the guesswork, a step towards vocabulary learning.

Authenticity was actually a reference for text selection, since the teachers had different positions as to the choice and use of authentic texts in their reading courses, reflected in total adherence by two teachers as opposed to a complete refusal by one teacher.

The issue of authenticity is controversial. During the interviews, I noticed that it caused tension in two moments: first, when one teacher asserted his choice of non-authentic texts so as to make his students' reading task less difficult; and second, when another teacher was asked about the source of one text used, and, upon concluding that it might not be authentic, tried to justify the choice by arguing that it was not a bad choice since it was written by a native speaker of the language.

Deciding whether or not a text is authentic is not simple. Although another teacher assured me that she dealt only with authentic texts, I have doubts concerning one text used, since there was no mention of source, and the text had a teaching format because it was copied from a textbook.

In regard to the notion of authenticity, Nunan (1999, p.37) claims it is a relative matter, that one 'de-authenticates' texts when "one takes into the classroom material collected out of the classroom". In addition to that, the author argues that de-authenticating material is not something teachers ought to be ashamed of, because the very specificity of classrooms is to make the learning process easier, where "the pedagogical 'bridges' are built by the teacher and the textbook so that learners ultimately can cross over into the authentic world beyond the classroom" (p.37).

In practical terms, the discussion of authenticity seems to be endless. Although relevant, it has, in my view, overshadowed the important issue of threshold level demanded by the reading task in relation to the students'

linguistic knowledge. One teacher chose texts without considering the students' linguistic knowledge and the other two showed either some concern, or strong concern towards that, which may suggest that ESP reading teachers may be moving away from strictly top-down oriented ESP reading courses, where one is supposed to facilitate the reading tasks, not the text itself.

However, concerning meaning presentation, it was found that the procedures used by the three teachers were, for the most part, based on the strategies traditionally used within top-down oriented reading courses, such as: a) previous discussion on the subject-matter to activate schemata; and b) activities done on affixes; and c) guessing meaning from context. Translation, used by one teacher with his low linguistic proficient students, and the dictionary, used by another teacher with her students, may suggest, however, that procedures other than schemata activation, contextual guesswork, and knowledge of affixes may be necessary for meaning presentation.

A recurrent problem found in the activities for meaning presentation was the inadequate choice of the words to be worked upon, since most of them were either infrequent, cognates, or used in Portuguese, which is, in my view, due to the fact the writers have very little, if any, knowledge of the Brazilian students' native language.

Concerning procedures to assist memorization, it can be concluded that teachers capitalized very little on the principles of memorization, and exploited only few of the possibilities suggested in the area. This very fact shows that they may be either unaware of the importance of these procedures, or unaware of what can be done in terms of vocabulary teaching, even with the large number of effective teaching procedures available.

Ultimately, there seem to be many issues, both theoretical and practical, still unresolved for language teachers concerning vocabulary instruction. The present investigation

shows the need for further debate on the role instruction plays for vocabulary development, and for workshops and courses specifically developed for vocabulary instruction.

REFERENCES

BADDELEY, A. *Human memory*: theory and practice. Hove, UK: Lawrence Erlbaum, 1990.

BROWN, D. *Teaching by principles*: an interactive approach to language pedagogy. New Jersey: Prentice Hall Regents, 1994.

CARTER, R.; MCCARTHY, M. *Vocabulary and language teaching*. London: Longman, 1988.

CHANNEL, J. Psycholinguistic considerations in the study of L2 vocabulary acquisition. In: CARTER, R.; MCCARTHY, M. (Org.) *Vocabulary and language teaching*. London: Longman, 1988.

COHEN, A. Learning vocabulary words. In: ___. (Org.) *Language learning insights for learners, teachers and researchers*. New York: Newbury House, 1990. p.21-40.

___. *Strategies in learning and using a second language*. England: Addison Wesley Longman Limited, 1998.

CRAIK, F.; LOCKHART, R. Levels of processing: a framework for memory research. *Journal of verbal learning and verbal behavior*, v. 11, p. 671-684, 1972.

DAY, R.; BAMFORD, J. *Extensive reading in the second language classroom*, 1998.

ESKEY, D. Holding in the bottom: an interactive approach to the language problems of second language readers. In: CARRELL, P.; DEVINE J.; ESKEY, D. (Org.) *Interactive approaches to second language reading*. Cambridge: Cambridge University Press, 1988.

GAIRNS, R.; REDMAN, S. *Working with words*: a guide to teaching and learning vocabulary. Cambridge: Cambridge University Press, 1986.

GOODMAN, K. Reading: a psycholinguistic guessing game. In: SINGER, H.; RUDDELL, R. (Org.) *Theoretical models and processes of reading*. 2. ed. Newark, DE: International Reading Association, 1976. p.497-508.

GOUGH, P. One second of reading. In: KAVANAGH; MATTINGLY. (Org.). *Language by ear and by eye*. Cambridge, Massachusetts: MIT, 1972. p. 331-358.

GU, Y.; JOHNSON, R. Vocabulary leaning strategies and language learning outcomes. *Language learning*, v. 46, n. 4, p. 643-679, 1996.

HARLEY, B. The lexicon in language research. In: ___. (Org.) *Lexical issues in language learning*. Amsterdam: John Benjamins, 1995. p.1-28.

HARLEY, B.; HOWARD, J.; ROBERGE, B. Teaching vocabulary: an exploratory study of direct techniques. *The Canadian modern language review*, v. 53, n. 1, p. 281-304, 1996.

HATCH, E.; BROWN, C. *Vocabulary, semantics and language education*. New York: Cambridge University Press, 1995.

KRASHEN, S. *Second language acquisition and second language learning*. UK: Pergamon Institute of English, 1981.

___. *Principles and practice in second language acquisition*. New York: Pergamon Institute of English, 1982.

___. We acquire vocabulary and spelling by reading: additional evidence for the input hypothesis. *The modern language journal*, v. 73, p. 440-464, 1989.

McLAUGHLIN, B. The monitor model: some methodological considerations. *Language learning*, v. 28, n. 2, p. 309-332, 1978.

MEARA, P. Vocabulary acquisition: a neglected aspect of language learning. *Language teaching and linguistics*, v. 13, p. 221-246, 1980

MORRISON, L. Talking about words: a study of French as a second language learners' lexical inference procedures. *The Canadian modern language review*, v.53, n.1, p.41-75, 1996.

NATION, P.; COADY, J. Vocabulary and reading. In: CARTER, R.; McCARTHY, M. (Org.). *Vocabulary and language teaching*. London: Longman, 1988.

NATTINGER, J. Some current trends in vocabulary teaching. In: CARTER, R.; McCARTHY, M. (Org.). *Vocabulary and language teaching*. London: Longman, 1988.

NUNAN, D. *Authenticity in language teaching*. New Routes in ELT, n. 5, p. 36-37, 1999.

OXFORD, R. *Language learning strategies*: what every teacher should know. New York: Newbury House, 1990.

RIDGWAY, T. Threshold of the background knowledge effect in foreign language reading. *Reading in a foreign language*, v.11, n.1, p.151-167, 1997.

RUMELHART, D. Toward an interactive model of reading. In: DOMINIC, S. (Org.) *Attention and performance*. Hillsdale, NJ: Lawrence Erlbaum, 1977. p.573-603.

SCARAMUCCI, M. *O papel do léxico na compreensão em leitura em língua estrangeira*: foco no produto e no processo. Tese (Doutorado em Lingüística Aplicada) - UNICAMP, Campinas, SP., 1995.

SCHMITT, N. Vocabulary learning strategies. In: SCHMITT; N.; McCARTHY, M. (Org.). *Vocabulary description, acquisition and pedagogy*. Cambridge: Cambridge University Press, 1997.

SÖKMEN, A. Current trends in teaching second language vocabulary. In: SCHMITT; N.; MCCARTHY, M. (Org.). *Vocabulary description, acquisition and pedagogy*. Cambridge: Cambridge University Press, 1997.

STEVICK, E. *Memory, meaning and method*. Massachusetts: Newbury House, 1976.

___. *Teaching and learning languages*. Cambridge: Cambridge University Press, 1982.

SUMMERS, D. The role of dictionaries in language learning. In: CARTER, R.; MCCARTHY, M. (Org.). *Vocabulary and language teaching*. London: Longman, 1988.

TOMITCH, L. Individual differences in text organization perception and working memory capacity. *Revista da ANPOLL*, v.2, p.71-93, 1996.

TUMOLO, C.H.S. *Vocabulary instruction*: the text as a source in the classroom. Dissertação (Mestrado em Letras/Inglês e Literatura Correspondente) – Universidade Federal de Santa Catarina, Florianópolis, SC, 1999.

WEST, M. *A general service list of English words*. England: Longman. Revised and enlarged edition, 1953.

WIDDOWSON, H. *Teaching language as communication*. Oxford: Oxford University Press, 1978.

Título: *Vocabulário e leitura: procedimentos de ensino em cursos de Inglês Instrumental*

Resumo: *Este artigo apresenta uma discussão sobre a relação de causa recíproca entre vocabulário e leitura, como também os resultados e conclusões de uma pesquisa realizada com três professores objetivando investigar os procedimentos usados para ensino de vocabulário em cursos de Inglês Instrumental. O foco da investigação foi em três passos considerados essenciais para aprendizagem de vocabulário: seleção de textos, procedimentos para apresentação de vocabulário e para retenção do vocabulário. Os resultados mostraram que, no que concerne aos critérios para seleção dos textos, familiaridade com o tópico e autenticidade do texto foram considerados os mais importantes, tendo os professores posturas semelhantes em relação à familiaridade de tópico, mas diferentes em relação à autenticidade. Em termos de procedimentos para apresentação de vocabulário, várias atividades foram usadas, sendo que a maioria refletia a abordagem top-down de leitura. E em termos de procedimentos para memorização, poucas atividades foram feitas para auxiliar a memorização em comparação às possibilidades apresentadas em literatura especializada.*

Palavras-chave: *vocabulário; leitura; procedimentos de ensino; Inglês instrumental.*