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Successful Idiom Solving Strategies While Reading and Reading Time with Trained and Untrained Learners

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ABSTRACT

The present article examines the outcomes derived from a task on intensive reading carried out by university students. The main goal is to analyze the frequency of use and the success of idiom solving strategies used by the subjects while reading. Additionally, our interest is to compare the above outcomes and the reading time scores of a group of trained learners with the results obtained by untrained learners. The results provide evidence to confirm three hypotheses posed in relation to (a) differences in the use of inferring from context, (b) the times that unknown words were ignored, and (c) the reading time related to the retention of words between trained and untrained university level learners.

INTRODUCTION

Vocabulary knowledge has only recently become an important issue in language research. The ways in which vocabulary is acquired have been explored, and through these examinations we have learned that (a) incidental learning (a by-product of reading for comprehension) (Krashen, 1989) and (b) intentional (or voluntary) learning have appeared as the two main sources of vocabulary knowledge. The incidental learning of vocabulary is considered by many as the most common form of vocabulary acquisition for learners who are beyond an elementary level of proficiency (Shouten-van Parreren, 1989; Hatch & Brown, 1995; Coady, 1997; Rott, Williams, & Cameron, 2002; Nation, 2001, Waring & Nation 2004; Brown, Waring, & Donkaewbua, 2008; Shahrokni, 2009). In the same vein, reading is considered the language skill that provides the most input, thereby affording more opportunities for vocabulary to be accessed, retained, and learned (Saragi, Nation, & Cameron, 1978; Nagy & Herman 1987; Laufer, 1992; Day, Omura, & Hiramatsu, 1991; Paribakht & Wesche, 1999; Hulstijn, 2001). This assertion is mainly based on L1 vocabulary growth rate where the large reading vocabularies of students cannot be attributed to vocabulary instruction but rather to their incidental learning through reading. This includes the learning of idioms, an important type of vocabulary and the target of investigation in the present study. More specifically, the effect of training in word-solving strategies is the study's prevailing focus, as well as the reading time in intensive reading.

LITERATURE REVIEW

Many studies have addressed the issue of evaluating the effect that learner training has shown in the area of vocabulary strategies. Kern (1989), for example, aimed at determining whether direct training in reading comprehension strategies was consistent and effective with American learners of French. The study involved three levels of students: low, middle, and high language ability. A significant difference was found between experimental and control students' comprehension gains, indicating that strategy instruction had a positive effect on reading comprehension. Likewise, Tassana-ngam (2004, 2005), who investigated the effect of vocabulary strategies training, found that her experimental group was significantly better that the control group in their ability to use the vocabulary strategies to retain words. Instruction was shown to be practical and effective in developing L2 readers' comprehension and inferring skills especially with low-ability readers. In the current study, we expected to find significant differences between the trained and untrained learners. The proficiency levels would only be considered in terms of the efficacy of the strategies used.

Other studies have been focused specifically on the area of word-solving strategies in reading. Fraser (1999) and Alseweed (2000a, 2000b) focused on various word-solving strategies including various types of inferring, dictionary use, and just plain old skipping over some words. Fraser (1999) describes in detail the case of 19 Francophone university students who received instruction on lexical processing strategies for unknown words. The instruction included effective inferring procedures (e.g., use of cognates, word structure, grammatical function, lexical cohesion, and structural redundancy). The teaching of these aspects was done in context and integrated into the course reading.

Alseweed (2000a, 2000b) focused on the training of word-solving strategies. This study aimed at finding out to what extent the use of word-solving strategies was affected by training and what use of these strategies high and low proficiency students respectively made before and after instruction. Results showed that both successful contextual guessing and morphological guessing (SMG) increased significantly whereas unsuccessful morphological guessing increased as much as SMG. The dictionary was used significantly more but only by the high proficiency learners. Bad Skipping decreased significantly, especially with the low proficiency learners, and misidentification decreased in both high and low proficiency students: the difference was not significant but the low proficiency students consistently made a greater number of misidentifications than the high proficiency students.

An analysis of Fraser's (1999) results in the use of the lexical processing strategies indicate that the inferring processes were used more frequently and more effectively, especially with contextual inferring processes which were used 65% of the time with a 78% rate of effectiveness. Despite the fact that the use of contextual inferring increased gradually, this increase was not significant. There was evidence of indirect effects since the rate of ignoring words decreased with instruction and the frequency and success of inferences increased. Thus, attention was paid to more unfamiliar words and more elaborate processing was undertaken, which led readers to more appropriate meanings, results which mirrored some of the expected effects of training among our two groups of learners.

The results of these studies were focused on the effectiveness of specific code-breaking strategies seem not to be significant. None of the studies reviewed above showed significant results concerning the effect of training; however, researchers found a more effective use of contextual inferring (Fraser, 1999; Alseweed, 2000a, 2000b) or morphological inferring (Alseweed, 2000a, 200b; Morin, 2003). They also found that misidentification or simply

ignoring words altogether decreased (Fraser 1999; Alseweed, 2000a, 2000b). These are differences that we expected to find between our groups of trained and untrained learners.

In relation to reading speed, different studies have reported the reading speed of their subjects which varied depending on the length of the text and also on the code-breaking strategies used. Waring and Takaki (2003), for example, used a reading text containing 5,872 words and the subjects of the study only used inferring due to the extended nature of the text: their reading speed was 104.8 words per minute but their retention level was low at 18.4% after immediate post-test, 7.6% one week later, and 0.3% three months later. Hulstijn, Hollander, and Greidanus (1996) used a reading text of 1,306 words and their subjects used controlled code-breaking strategies: either multiple glosses (MG) or the use of dictionary (D) and inferring (I). During the 20-minute test, the subjects had a reading speed of 65.3 words per minute in the three conditions. Their reading speed was considerably slower than in Waring and Takaki (2003) due to the inclusion of strategies apart from inferring. The percentages of retention were considerably higher than in Waring and Takaki (2003), MG 18% and 35% with words appearing once or three times respectively; D and I 3% and 15% respectively. The time limit discouraged dictionary use, but for the words looked up, the retention was 25% and 65% rspectively.

Furthermore, Wingate (2002) tested the use of the monolingual and bilingual dictionaries: the two groups had a text of 250 and 293 words respectively and their reading speed was on average the same 31.4 words per minute. Their comprehension and retention scores were 25.7% and 10.2% for the MD group and 29.6% and 17.4% for the BD respectively. The analysis of the results of these studies indicate broadly that if the reading speed is slower, readers are more likely to use appropriate word-solving strategies that would lead to higher levels of comprehension and retention.

The studies carried out in the area of idiom comprehension have been focused on the exploration of these idiom variables: (a) interlingual similarity, in the sense of how close in meaning the literal translation equivalent is (Irujo, 1986; Cooper, 1999; Liontas, 2002a, 2002b, 2002c; Charteris-Black, 2002; Bulut, 2004; Yoshikawa 2008); (b) level of formality (Cooper, 1999; Bulut, 2004); (c) transparency (Cooper, 1999; Bulut, 2004; Yoshikawa 2008; Fuste-Hermann, 2008); (d) contextual inferencing (Cooper, 1999; Bulut, 2004; Liontas, 2002a, 2002b, 2002c; Fuste-Hermann, 2008); and (e) interlingual familiarity, similarity of metaphoric theme/vehicle (Boers & Demecheleer, 2001; Charteris-Black, 2002; Boers, Demecheleer, & Eyckmans, 2004; Szczepaniak, 2006). Most of the studies cited previously did not review the literature on general inferencing; they mostly assume that internal clues are most relevant and this makes sense if we consider that phrasal idioms possess a lot of internal structure. However, other idiom variables should be considered that go beyond the internal clues of the idiom such as contextual guessability.

Most of the studies on idiom comprehension mentioned above did not use an extended reading text in order to present the target idioms (as in most studies on the inferencing of general vocabulary). The context provided has been reduced to sentences or paragraphs or even to the presentation of the item in isolation (Boers & Demecheleer 2001). This has prevented the learners from using backward or forward textual clues included in the global context. All the tasks in the idiom comprehension studies required the learners to infer the meanings of idioms. Liontas (2002b) makes this claim abundantly clear with the following assertion:

> One can suggest that research into idiom understanding (i.e., the combined comprehension and interpretation of idioms) must be text situated and context-based so

> that the investigation of factors affecting the reconstructive nature of the idiomatic process is not reduced to an analysis of individual words and sentences (p. 158).

In this line, all use of dictionaries was disallowed. Inferencing from the semantic similarity in L1 and L2, inferencing from context, inferencing from the familiarity with the metaphoric theme, and inferencing from background knowledge appear to be the most common strategies used by the learners in order to get the meaning of the idioms (using interlingual and extralingual knowledge sources). If these strategies are compared with the most common strategies used in studies on the inferencing of general vocabulary, we find that the strategies are almost the same. The lone exception lies in the field of morphological analysis, which is broadly used when inferencing single vocabulary items (De Bot, Paribakht, & Wesche, 1997; Paribakht & Wesche, 1999; Nassaji, 2000). Inferencing from the meaning of the individual words in the idioms is perhaps the strategy that learners use for idioms and that would replace morphological analysis, a knowledge source based on interlingual aspects. Hence, given the findings in the area of vocabulary in general, one can make certain assumptions in relation to the use of word-solving strategies for idioms contained in dense text. These assumptions are embodied in the following three hypotheses:

1. Trained learners will ignore fewer idioms than the untrained learners.
2. Trained learners will use inferring from context with more success than untrained learners.
3. A lower speed in reading would lead to better comprehension and retention of vocabulary.

METHODOLOGY

Subjects and Training Process Description

The present study involved the participation of thirty-two students divided into two groups. Both groups of learners were in their 6th semester of undergraduate studies in Applied Linguistics at the State University of Tlaxcala, Mexico. The students participated voluntarily from their respective intact groups. The thirty-two students were 16 learners in the experimental group which could also be named the 'trained learners' (TLs) and 16 learners in the control group which are called the 'untrained learners' (UTLs). Both groups have always taken the same courses but in different shifts.

The answers given by the students in a background questionnaire are summarized in Table 1. Two measures of proficiency have been added to this profile: the results of the Vocabulary Levels Test administered by their respective teachers before the study took place and measures of proficiency based on the learners' marks obtained at the end of the fifth semester.

There were sixteen students in each group and their average age was 21 years in the TLs' group and 22 years in the UTLs' group. The predominant gender was female in both groups as well as in the whole population of the academic department. In the TLs' group there were twelve female and two male, and in the UTLs there were thirteen female and three male. There was no special interest in considering age and gender as variables to control and compare. This information is provided only as general information on the subjects.

Table 1. Subjects' Background Information

Variable	Group A	Group B
Number of Students	16	16
Female	12	13
Male	4	3
Age (Average)	21	22
Years of Study (Average)	9	9
V.L.T. (3,000 words) (Mean)	72.3	70.4
Proficiency Level	82.5	75.3

An independent-samples t-test was used to compare the means of the results of the Vocabulary Levels Test and no significant difference was found between the two groups ($t = .748$, df 29, $p > 0.05$). The t- test was also used to compare the means of the proficiency level of the learners and the difference was not significant either ($t = 1.725$, df 29, $p > 0.05$).

The training of the experimental group (TLs) took place in the second semester of an EFL program. Students were selected based on their performance in a reading comprehension test in L1. In order to determine the content of instruction, all students informed the teacher which strategies they used least. The researcher used a questionnaire for this purpose. The results suggested that those strategies were (a) reading the title of the text and making predictions, (b) examining the text to identify more specific information (scan for information), (c) identifying the grammatical category of the words, (d) recognizing cognates, (e) using the context to find the meaning of unknown words, (f) using the images that accompany the text, and (g) understanding the deictic use of pronouns in the text. From these strategies, "d," "e," and "f" are relevant to our study while "g" is relevant to a lesser degree.

Before the training, all the learners took the reading comprehension section of the Cambridge PET exam. The teacher presented the seven strategies for five weeks in an explicit form. She used the Cognitive Language Learning Approach (CALLA) of O'Malley and Chamot (1990) which consists of five stages: preparation, presentation, practice, evaluation and expansion. Two classes (90-minutes each) out of the five that learners had during the week were devoted to the explicit instruction of the strategies, the other three days were devoted to normal class time that included work on strengthening the strategies previously studied. Students were asked to write self-reports every week to describe the strategies they were using with every text they read.

The explicit training of the learners continued into the third year of their studies. Specifically, during the 5th semester, the TLs (unlike the UTLs) studied the textbook strategies while complementing their work with independent follow-up activities. They were expected to use a wide variety of strategies to help them work on projects that were evaluated weekly in class presentations.

Task Description

The reading task was administered to the two groups separately. Learners received the text containing 21 target idioms expected to be unknown by the subjects. The text was made up of 1,159 words with a lexical density: 340/1159 = 0.29. The reading ease is indicated below:

$$\text{Reading Ease} = 206.825 - \underset{111.54}{(.846 \times 132)} - \underset{13.394}{(1.015 \times 13.2)} = 81.89$$

When applying the formula, the scores fall between 1 and 100. The higher the score the easier the text is when reading. The reading ease of the main study text (81.89) was slightly higher than the reading ease of the pilot study text (77.99).

When students started reading, they were asked to write down the time on the top of the text. They did the same when they finished reading. The learners took approximately one hour and fifteen minutes to finish reading the text and they were allowed to use any type of word-solving strategy. Immediately after reading, the subjects proceeded to identify the idioms in the text by underlining them. On average, the idiom identification test lasted 12 minutes. The next step was the answering of 'The Immediate Retrospective and Elicitation Questionnaire' (IREQ). It is worth noting here that the same questionnaire was also administered three weeks later in an effort to obtain the measure of 'Delayed Retention.' (For a sample question of this questionnaire, see Appendix A.)

RESULTS AND DISCUSSION

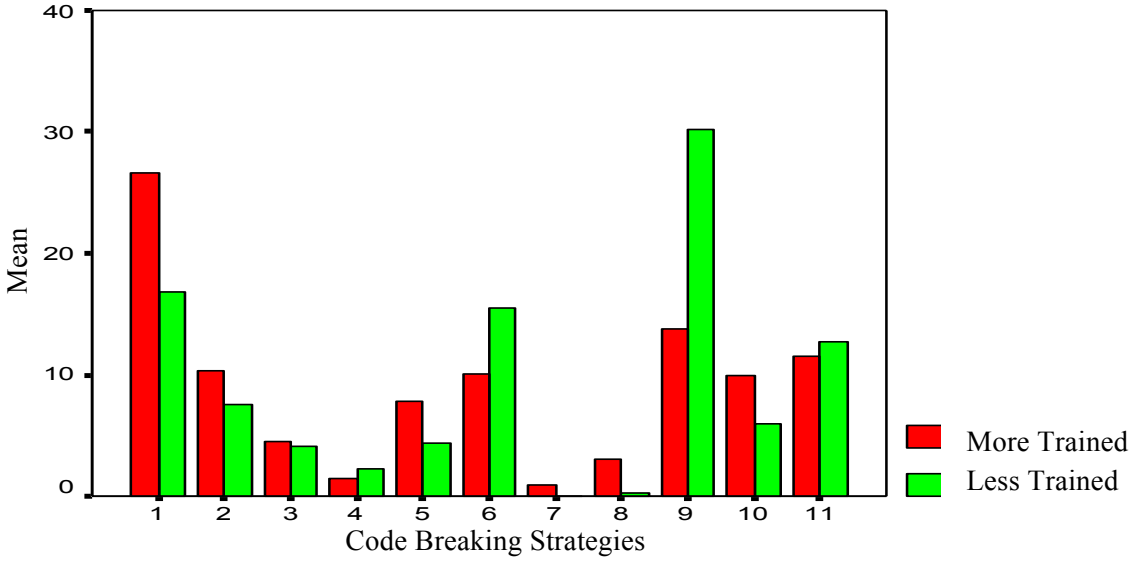
A comparison between the groups of students is provided in Table 2. The following statistics describe the frequency of use of the eleven word-solving strategies, including simple ignoring.

Table 2. Percent of Frequency of Word-solving Strategies Between Groups

		Trained and Untrained Learners	N	Mean
1.	Inferring from context (IC)	Trained	16	26.6346
		Untrained	15	16.8360
2.	Inferring from the meaning of words (IMWs)	Trained	16	10.3618
		Untrained	15	7.5556
3.	Inferring from interlingual similarity (IIS)	Trained	16	4.4792
		Untrained	15	4.1270
4.	Inferring from metaphor (IM)	Trained	16	1.4881
		Untrained	15	2.2963
5.	Consulting the monolingual dictionary (MD)	Trained	16	7.8274
		Untrained	15	4.3810
6.	Consulting the bilingual dictionary (BD)	Trained	16	10.0345
		Untrained	15	15.5317
7.	Asking the teacher	Trained	16	.9226
		Untrained	15	.0000
8.	Asking peers	Trained	16	3.0208
		Untrained	15	.3175
9.	Ignoring	Trained	16	13.7578
		Untrained	15	30.2354
10.	Inferring plus verifying (I+V)	Trained	16	9.9107
		Untrained	15	6.0212
11.	Dictionary plus verifying (D+V)	Trained	16	11.5625
		Untrained	15	12.6984

The mean values in Table 2 show that the trained learners used most of the word-solving strategies with greater frequency than the untrained learners except for four of them: "4. Inferring from metaphor," "6. Bilingual dictionary," "9. Ignoring," and "11. Dictionary plus verifying." These differences are illustrated in Figure 1. The most striking differences between the means of the two groups are the high percentage of "9. Ignoring" and the low percent of "1. Inferring from context (IC)" of the UTLs.

Figure 1. Percent of Frequency of Use of Code-breaking Strategies: Trained (TLs) and Untrained Learners (UTLs).



An independent–samples t-test was used to verify if any of these differences were significant. The t-test indicates that there is a significant difference in 'asking peers' (t = .2.834, df = 29, p = 0.008 two-tailed). The TLs asked more questions to their peers (3.02%) than the UTLs did (.3%). A significant difference was also found concerning the amount of ignoring between the two groups, (t= -3.008, df = 29, p = 0.005 two-tailed). The UTLs ignored significantly more target idioms (30.2%) than the TLs (13.7%). '1. Inferring from context (IC)' and 'asking the teacher' were nearly significant concerning their frequency of use by the two groups (t= 1.764 df = 29, p = 0.088 two-tailed; t = 1.799, df = 29, p = 0.082, two-tailed respectively).

The results obtained with this inferential test examining the frequencies of the word solving strategies used provide enough information to support Hypothesis 1: 'Trained learners will ignore fewer idioms than the untrained learners,' and our results are in line with other studies, as with Fraser (1999) and Alseweed (2000), where trained learners ignored significantly fewer target words than the untrained learners, our TLs ignored significantly fewer idioms than the UTLs (t = -3.008 df =29, p = 0.005, two-tailed).

We also calculated, for each person, the frequency scores of each strategy use with an accurate code-breaking result. The descriptive statistics in Table 3 show that the TLs apparently used all code-breaking strategies with more success than the UTLs except for '4. Inferring from metaphor (IM).' Mann Whitney tests were used to verify if any of the differences in the correct idiom code-breaking of various word solving strategies were significant. The tests indicate that

there is a significant difference between the groups regarding the following: (a) '2. Inferring from the meaning of words (IMWs)' (U= 47.500, N1=16, N2=15 p=0.003, two-tailed). The TLs used this strategy more effectively (6.5%) than the UTLs (1.8%); (b) a significant difference was also found concerning the effectiveness of use of '5. Monolingual dictionary (MD)' (U= 66.500, N1=16, N2=15 p=0.033). The TLs used the MD more effectively (4.5%) than the UTLs (.8%).

Table 3. Mean Percent of Correct Idiom Code-breaking:
Code-breaking Strategies Used by TLs and UTLs

		Trained and Untrained	N	Mean
1.	Inferring from context (IC)	Trained	16	16.3596
		Untrained	15	10.4550
2.	Inferring from the meaning of words (IMWs)	Trained	16	6.5938
		Untrained	15	1.8783
3.	Inferring from interlingual similarity (IIS)	Trained	16	3.1250
		Untrained	15	2.6984
4.	Inferring from metaphor (IM)	Trained	16	1.3393
		Untrained	15	1.7407
5.	Monolingual dictionary (MD)	Trained	16	4.5238
		Untrained	15	.8571
6.	Bilingual dictionary (BD)	Trained	16	7.1699
		Untrained	15	5.0370
7.	Asking the teacher	Trained	16	.9226
		Untrained	15	
8.	Asking peers	Trained	16	1.2202
		Untrained	15	.0000
10.	Inferring + verifying (I+V)	Trained	16	6.9345
		Untrained	15	2.8889
11.	Dictionary + verifying (D+V)	Trained	16	7.2917
		Untrained	15	5.3657

The significant difference of "2. Inferring from the meaning of words (IMWs)" is important because this strategy appeared to be a good predictor of correct idiom code-breaking and delayed retention. If the UTLs were less successful with using this strategy, then as a consequence they had lower scores in these two processes than the TLs did, as we can see in Table 3. With these results we can partly confirm Hypothesis 2: 'Trained learners will use inferring from context with more success than untrained learners.' As can be seen in Table 3, TLs used '1. Inferring from context (IC)' with more success than the UTLs. The difference, however, is insignificant as it is with '5. Monolingual dictionary (MD)' and '2. Inferring from the meaning of words (IMWs),' strategies used with far greater success by the TLs than the UTLs.

Regarding reading speed, the individual reading record was calculated in minutes and entered in SPSS. The descriptive statistics showed that trained learners had as a mean 79.37 minutes and the untrained learners had a mean of 57.26 minutes. These results indicate that the TLs spent more time in reading the text than the UTLs. Given that the reading text had 1,159 words, the TLs had a reading speed of 15 words per minute while the LTLs had a reading speed of 20 words per minute. The TLs spent on average twenty-two minutes more than the LTLs. An

independent-samples t-test indicates that there is a significant difference between the two groups ($t = 4.847$, $df = 29$, $p < 0.001$ two-tailed). A Mann Whitney (NPT) showed this significant difference as well ($U = 20.000$ $N1 = 16$ $N2 = 15$ $p = 0.000$, two-tailed).

The cause of this difference could be due to the percentage of ignoring. The TLs ignored 13.7% of the target words while the UTLs ignored 30.2% (see Table 2), twice as much as the other group. The high percentage of ignoring by the UTLs implies less time trying to code-break their meanings. We have to highlight the fact that TLs used more code-breaking strategies than the UTLs, which also implies more time-spent on reading. The scores of correct idiom code breaking and delayed retention as we have seen in other studies were also higher with the learners that invested more time in reading (TLs). All the above confirms Hypothesis 3: 'A lower speed in reading would lead to better comprehension and retention of vocabulary.' This comparative information in our study and in previous studies can be seen in Table 4.

Table 4. Length of Texts, Reading Speed, and Immediate and Delayed Retention Scores

	Waring & Takaki (2003)	Hulstijn et al. (1996)	Wingate (2002)	Our Study
Length of Text	5872 words	1306 words	250/293 words	1159 words
Reading Speed	104.8 words per minute	65.3 words per minute	31.4 words per minute	15 and 20 words per minute
Comprehension	18.4%		BD 29.6% MD 25.7%	
Immediate Retention	7.6%	MG 21.5% D 45% C 9%	BD 17.4% MD 10.2%	TLs 55.4% ULTLs 30.9%
Delayed Retention	0.3%			TLs 38% ULTLs 30.6%

Table 4 shows that the longer the texts were in the different studies the faster the reading speeds were. Moreover, the rate of comprehension of the unknown words in the texts is closely related to the reading speed. The slower the students read the more words they immediately retain. In Hulstijn et al. (1996) and in our study, the immediate retention scores are similar with untrained learners; however, our study had idioms as target words and not merely single vocabulary items.

CONCLUSIONS

The three hypotheses of the study predicted significant differences between trained and untrained learners with respect to the difference in the rate of ignoring unknown words between trained and untrained learners, with the trained learners being the ones who used this strategy less than the other group. The results showed that training has an effect on the effort that trained learners are making in order to get the meaning of words they do not know at the moment of reading and perhaps this is contributing to an incidental learning of the new vocabulary.

In relation to the second hypothesis, the effectiveness of inferring from context in comparison with other word-solving strategies by the trained learners was also confirmed but not to a significant degree. It is, nonetheless, very informative to discover that when learners code-break the meaning of idioms through analysis of their individual meanings, they are more

successful than when they use the context for this purpose. We have to admit that the studies used to corroborate the present hypothesis did not have idioms as the target vocabulary items of their respective studies, whereas our study distinctly focused on the characteristics of idioms in their code breaking. Furthermore, the reading time of trained learners was longer than the reading time of untrained learners because they were applying more word-solving strategies that were slightly more time-consuming. Moreover, this feature led trained learners to get higher scores in correct idiom code breaking in comparison with the untrained learners; hence, this investment of time was wisely and productively done.

In sum, training seems to make a difference in the way students are facing vocabulary problems. Training is benefiting the informed use of word-solving strategies and helps learners understand more of what they read. Understanding the content of texts is helping learners to do appropriate inferring and to be more engaged and interested in continuing with the reading.

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APPENDIX A

A sample question of the 'The Immediate Retrospective and Elicitation Questionnaire' (IREQ)

Be at someone's beck and call

1. I knew the idiom before reading the text, it means: _____
2. I did the following when I read the idiom (1-4)
   ( ) Looked it up in the dictionary: *bilingual / monolingual / electronic/ pocket*
   ( ) Asked for its meaning: *teacher / peers / overheard*
   ( ) Ignored it
   ( ) Inferred its meaning through: *context / word meaning / Spanish similarity / metaphor*
3. The meaning of the idiom is: _____

4. I know the meaning of the following words in the idiom:

_____ _____ _____ _____