The dictionary is an accepted instructional aid in foreign language teaching. Its use is so widespread that its status is often taken for granted as far as teachers and students are concerned. Its potential as an aid to learning is usually not questioned—both learners and teachers expect the dictionary to solve problems created by unfamiliar vocabulary items that present themselves during the reading process. Teachers' attitudes toward the dictionary tend to be simplistic—e.g., "If you don't understand a certain word, look it up in the dictionary" (see, for example, Scholfield). But what really happens when learners open their dictionaries?

There appears to be a lack of fit between expectations and reality concerning dictionary use. The recommendation of teachers to learners to look words up in the dictionary is based on the assumptions that (1) students know how to use a dictionary and (2) the dictionary provides meanings. Students' searches for words in the dictionary are based on the expectation that they will be able to find meanings without too much difficulty and that ideally these meanings will be accompanied by helpful examples of the word used in context. Yet students and teachers may be taking too optimistic a position if they think that dictionaries readily provide meanings for foreign words that are unknown or that the learner is unsure of. In other words, the process of getting meaning is not so simple, in that each search requires from the user a given level of linguistic proficiency, experience with dictionaries, prior knowledge, and appropriate search strategies (Scholfield). It is also likely that in preparing the dictionary, the lexicographer assumes that potential users will possess the necessary interpretive skills to use the dictionary effectively—e.g., a lexicographical metalanguage (Gold). In actuality, there appears to be a lack of fit between the presuppositions of dictionary writers and the abilities of the users (Hartmann).
Although the gap between users' needs and expectations of the dictionary and what the dictionary can actually offer has been dealt with in the research literature, the actual processing of dictionary entries by users seems to have been given somewhat less attention than it deserves. It appears that certain presuppositions are made in the construction of dictionaries as to how they will be used and that such presuppositions may well be unfounded (Gold).

It is important to note that the dictionary probably cannot really help in the case of a completely unknown word and can help only when one wants to check or recall a word that is already somewhat familiar to the user (Miller and Gildea; Ard). Using the dictionary, then, may be frustrating in the initial study of word meaning as the definitions it gives are such that if learners have no conception of the word to begin with, the definition may not help them very much because it may well contain words that are likewise unknown (Gipe).

In order better to understand users' apparent lack of efficiency in dictionary use, it is necessary to examine what actually happens to students while they are using dictionaries during reading. The procedure is more complex than it might appear to be. When learners come across an unfamiliar word and consider turning to the dictionary, they go through what amounts to a series of complex cognitive processes, where at every stage they have to make important decisions. First, a decision has to be made whether the meaning can be inferred from context or whether the user needs the dictionary. More competent readers—those who are good at inferring meaning from context—are also likely to be more efficient dictionary users than are slower readers. Hence, higher-proficiency students probably make less use of dictionaries than they might, while lower-proficiency students, who need them more, are not able to use them effectively.

Once the reader decides to turn to the dictionary, the subsequent cognitive tasks can be quite demanding. The normal flow of reading is interrupted for finding the word, but the context where it appeared has to be kept in mind. Furthermore, the search itself demands some technical skill—e.g., knowledge of external and internal letter order. C. Broadhurst claims that even such an "elementary skill" as having a working knowledge of alphabet order must not be taken for granted. The reader may also need to remove inflections in order to recover the form being looked up (Scholfield). When readers finally get to the desired word, they still have to make some crucial decisions: a choice has to be made among the alternatives presented by the dictionary, and this choice has to be made according to the word's function in context. This involves checking the information contained in potential definitions against the context. With a tentative choice of the most suitable definition, the reader must go back to the context and make sure, by mentally replacing the meaning for the word, that this is the correct meaning (Scholfield; Miller and Gildea). No wonder, then, that such a process has great potential for error.

User difficulties help explain the dislike some learners have for the dictionary (see Miller and Gildea). In short, the task of finding the right meaning in the dictionary entails a complex set of processes, with potential obstacles for users at every stage (Mitchell). Given the potential obstacles, only a minority of foreign language learners enjoy using monolingual dictionaries in the target language. The majority limit themselves to bilingual dictionaries and then only when they feel that they have no alternative. Few foreign language learners are truly aware of the linguistic resources that monolingual dictionaries provide them (Alexander). These few tend to be the competent learners, who may already know some or most of that information.

The problems discussed here simply underscore the importance of learning more about the needs of dictionary users as well as about the skills expected of them (Hartmann). It is also necessary to examine to what extent the dictionary really helps its users, bearing in mind the problems mentioned. M. Bensoussan, for example, found that using a dictionary did not influence performance in reading comprehension among advanced EFL students.
In one of the few published "process" studies concerning dictionary use, J. Ard investigated how English-as-a-second-language students in a high-intermediate level writing class used bilingual dictionaries. He collected both retrospective accounts of their procedures in and out of class and examples of words they looked up in their bilingual dictionary during class. He also obtained oral protocol data from two of his students while they were writing a short in-class composition, one of them using the bilingual dictionary while composing her text. Ard concluded that the use of a bilingual dictionary leads to certain types of errors, depending on the differences between the user's first and second language. Studies like this one motivated the current process-oriented research effort aimed at further clarifying the sources of problems in dictionary use.

The specific research questions were as follows:

1. What strategies and outcomes characterize the use of monolingual and bilingual dictionaries by EFL learners?

2. How does the proficiency level of the student relate to the strategies used and outcomes?

3. Does the search for a given word provoke certain strategies and outcomes?

4. Does the dictionary aid in performing reading comprehension tasks?

5. What type of dictionary do students at different levels of proficiency prefer?

6. Are there strategies or outcomes specific to the use of a monolingual or a bilingual dictionary?

7. In what ways might the dictionaries themselves be problematic?

Research Design

Subjects

The subjects were six students at the Pre-Academic Center of the Hebrew University of Jerusalem. They were at that time enrolled in a course in the reading of academic texts in English as a foreign language. Two students each were selected from high, intermediate, and low-level EFL classes.

Instruments and Data Collection Procedures

1. Dictionaries: Three dictionaries were used by students in the study:

   a. English-English: lower-level students used the *Longman Active Study Dictionary of English*, intended for beginners. Intermediate and advanced students used *Collins English Learner's Dictionary*. These dictionaries were selected because they represented the dictionaries that the students were actually using in their current EFL classes and that they were thus accustomed to.

   b. English-Hebrew: all students used the *Megido Modern Dictionary*.

2. Tasks: Every student had to complete two tasks individually, each requiring the use of a dictionary. There was no time limit put on these tasks. Task #1 consisted of ten sentences, each containing an underlined polysemic word (see Appendix A). Students had to look these words up in the dictionary (even when they claimed that they knew them), first in the monolingual and then in the bilingual dictionary. Learners were to provide verbal report protocols while searching for words in the dictionary, indicating the processes they were using in their search. The protocols were tape-recorded. Subjects were to give each word meaning in their native language (Hebrew) and to explain why they had selected that meaning. Meanings were to be provided in Hebrew as a way of checking whether the words were actually understood.
In Task #2, students were once again confronted with ten words to look up, this time in a passage written by Helen Keller (approximately 150 words) (see Appendix B), and once again they were requested to provide verbal report data. All words selected were uncommon to ensure the need for a dictionary. In this task, learners could select whichever dictionary they preferred, or even forgo the use of a dictionary if they so chose. Learners were also asked to summarize the passage in their native language as a check for general comprehension beyond word-level recognition.

Strategies and outcomes were tallied quantitatively on the basis of the recorded protocols. They were calculated for each student separately according to frequency of occurrence.

3. Interview: In both tasks, subjects were also interviewed about their attitudes and preferences regarding the selection and use of the dictionaries, and as part of the second task they were questioned as to why they chose a given dictionary (English-English or English-Hebrew) (Appendix C).

Findings

The followings are the findings by research question:

1. Strategies and outcomes characterizing the use of monolingual and bilingual dictionaries by EFL learners on Task #1. The analysis of the data revealed a variety of strategies and outcomes both at the point when students were first confronted with the set of unknown words in the ten sentences and then during and after the search. They included:

   a. Before the search:

      1) reading the sentence repeatedly before going to the dictionary.
      2) translating the sentence into the native language.
      3) encountering a problem with other word(s) in the

4) forgoing a decision regarding the part of speech.

5) formulating an incorrect expectation as to the possible meaning of a word.

6) formulating a correct expectation as to the possible meaning of a word.

b. During or at the end of the search:

1) Reading only the first definition in the monolingual dictionary. Sample quotations (translated from Hebrew): (low student) “I didn’t go on after the first definition, I thought all the rest were just examples.” (advanced student) “There are many definitions here, quite close in meaning. Usually I wouldn’t bother to find the precise one. I would make do with one that covers the general idea.”

2) Encountering a problem with vocabulary in a definition in the monolingual dictionary. Sample quotation (other low student): “I don’t understand this definition. What should I do—look up the meanings of words in the definition? Where does it stop?”

3) Encountering a problem with terminology in the monolingual dictionary (abbreviations, acronyms, terms). Sample quotations: (low student) “All these signs and abbreviations frighten me!” (advanced student) “I like using the dictionary and so quite often, but I don’t like all those abbreviations and symbols, which make the search tiresome.”

4) Encountering an alphabet order problem—especially internal to the word being sought. Sample quotation: (advanced student) “I have a problem with alphabetic order. I keep having to sing to
myself that tune we learned in the first year of our English studies in order to remember which letter comes next.”

5) Encountering a problem with the monolingual or bilingual dictionary entry itself (e.g., the desired meaning is not found).

6) Encountering a problem with the format for presentation of the definition in a given monolingual or bilingual dictionary (e.g., the size of the text, the spacing of the definition and example).

7) Experiencing frustration during the search. Sample quotations: (low student) “Actually the dictionary hardly ever helps me. I don’t understand the definition and I feel it hinders me more than it helps me.” (advanced student) “I hardly ever use a dictionary—only when there’s really no choice.”

8) Arriving at the word meaning but uncertain about it, whether with a bilingual or a monolingual dictionary.

9) Arriving at the correct conclusion on the basis of the dictionary.

2. Student proficiency as related to the strategies used and to the outcomes. The high-proficiency students went into their search with correct expectations at the sentence and word level and drew appropriate conclusions for the dictionary entries. One of these students said that she used the monolingual dictionary a lot out of intellectual curiosity in order to reinforce her expectations, although she was bothered by all the symbols and abbreviations. The other high student used the dictionary less because she found it time-consuming. As she put it, “We even get used to doing without dictionaries on tests because of the time pressure.”

The intermediate students did not necessarily determine the part of speech the word reflected before commencing the search, had incorrect expectations at the sentence or word level, and had problems with other words in the definition.

The low students had ineffective strategies and encountered numerous problems. One low student said that dictionaries did not help her because they were not comprehensible—that she often came away with the wrong definition. Thus, she used them as infrequently as possible. As she put it, “Actually, I have misunderstood dictionary definitions so often in the past that I have decided to stop wasting my time with them.” The other low student made a similar comment: “I hardly ever open a dictionary—maybe just in order to understand the title of a text. Otherwise, I find it doesn’t help because I don’t understand the words in the definition.” He also found it a bother to leave the context in order to look in the dictionary. The lower students were also found to need more time to look up words.

3. The effect of specific word searches on strategies and outcomes. It appeared that the words “moored,” “fare,” and “pawn” (Task #1) were the easiest to find for all six students. Words for which an easy-to-understand context was provided in the task sentences produced the largest number of correct hypotheses and eventually led to a successful search. When there were fewer contextual clues, the subjects had more difficulty formulating correct hypotheses, which in turn led to a faulty search and faulty conclusions.

The following are some examples of items that were most prone to problematic search:
a. "rack" The monolingual dictionary definition presupposes world knowledge: low students did not know about the Spanish Inquisition. All students had difficulty with one or more words in the definition of this word.

b. "dash" There were problems with words in the definition in the monolingual dictionary.

c. "gloss" This item prompted repeated reading of the sentence before going to the monolingual dictionary. There were also problems with other words in the definition. The word was not found at all in the Longman dictionary.

d. "lap" The required meaning did not appear in the bilingual dictionary.

e. "glory" The definition of the word form was hard to find in both of the monolingual dictionaries, probably because of the layout. The entries dealt primarily with the word in its nominative and adjectival form and not as a verb.

4. The dictionary as an aid in performing reading comprehension tasks. The dictionary did not seem to help much in comprehending the text on Task #2. All students appeared to get the general meaning of the passage. While the lower students demonstrated difficulty at getting the meaning of specific words, they still managed to get the main idea. The higher-proficiency students generally had an idea of the semantic field of a polysemic word before attempting to search for it. What made this task more difficult for the low students was that they lacked the relevant world knowledge for correctly interpreting the text. For example, both low students did not know who Helen Keller was and thus lacked the crucial schema that would have made the use of the dictionary more profitable.

5. The dictionary preference of students at different levels of proficiency. The two high-proficiency students preferred the monolingual dictionary. They found that it helped give them more precise meanings for words. Their preference for the monolingual dictionary stemmed from a combination of language proficiency, past experience, a certain perfectionism in search style, and intellectual curiosity which, according to their own self-report, made the search more enjoyable. The other students preferred the bilingual dictionary. They objected to the need to read a lot of text in the monolingual dictionary in order to understand the word.

6. Strategies or outcomes specific to the use of a monolingual or bilingual dictionary. In the second task, where selection of dictionary was left to the students, they relied primarily on one type of dictionary for the entire task. The two higher-proficiency students alone chose the monolingual dictionary because they felt they could not trust the bilingual one so much and they liked the range of meanings in the monolingual one. Occasionally the intermediate learners also used the monolingual dictionary—when they did not understand or were dissatisfied with the information in the bilingual dictionary. The low students used the bilingual dictionary exclusively.

Use of a bilingual dictionary called for proficiency in the foreign language (English) but also in the native language in order to find the best native-language equivalent. Therefore, it seems that successful use of the bilingual dictionary favors those with linguistic inclination.

7. Problems inherent in the dictionaries themselves. In the bilingual dictionary, the entries for the words in this study tended to be written in a high register. The Hebrew language equivalents sometimes constituted rare or strange words and phrases not acceptable in common usage and difficult to understand. Several of the words (e.g. "lap") did not have the necessary meaning included in the dictionary at all, even though they were common words. Additionally, in the bilingual dictionary in some cases an alternate word in parentheses was much preferable to the "main" meaning. In other cases,
the meaning was of no use but the example was. In short, five of the ten definitions for the first task were found to be somewhat lacking.

There were also some problems with the monolingual dictionaries:

a. "moor": Words in the definition—"secure" (in the Collins Dictionary) and "fasten" (in the Longman Dictionary)—were not known to low and intermediate students.

b. "rack": Low students did not know "instrument" and "torture."

c. "bearing": One learner remarked that he had difficulty finding the definition in a "forest of words."

d. "dash": The phrase "small amount" was reported by the low students as difficult to understand. In addition, they did not know "pepper," and intermediate ones did not know "vinegar," words used in the dictionary examples.

Then there were certain technical problems regarding the layout of the dictionaries. The size of print and the format of the display were constraining factors—i.e., small letters and crowding, and a lack of adequate separation between the definition and the example.

The fact that there were problems with the dictionary entries themselves highlighted an attitudinal difference between the high and the low students. Whereas high-proficiency students felt that the problems encountered while using the dictionary might be the result of weaknesses in the dictionary, the low students felt that the problems they encountered were their problems.

Discussion and Conclusions

This study raised a number of issues regarding dictionary use. The major ones will now be discussed, with the emphasis on the skills that dictionary users need.

First of all, it would seem that learners need training in dealing with multiple entries in a dictionary. They need to know, for example, that they may have to read and check four or five entries before the desired meaning appears. Learners need to cope with the time-consuming and potentially distracting task of having to take each definition back to the context to see if it is appropriate. The inclusion of polysemic words in this study was meant to highlight the problems associated with this type of dictionary search. Students may look in the wrong place, give up the search before getting to the appropriate meaning, or continue the search without realizing that they have reached the correct meaning. All three instances can lead to "dictionary fatigue" and encourage hastiness or despair, helping to explain why students are reluctant to use a dictionary (see also Hartmann).

Dictionary users need to know how to get the maximum from any available contextual clues (e.g., grammatical category of the word, semantic field of meaning, etc.) before searching for the meaning of a word in the dictionary. Learners also need ample practice with uninflected and inflected forms in order to know what form to look for in the dictionary. An intermediate student, for example, was unable to find "calf" in the dictionary because she was looking for the inflected form "calves" until the investigator intervened. Although the dictionary refers users to the singular form, this student did not know what the reference symbol meant.

The mechanics of dictionary use—i.e., alphabetical order, symbols used, abbreviations—also need to be learned in order to get maximum benefit. Difficulties with alphabetical order make the search longer and more tiresome (Broadhurst), and thus the order needs to be learned well—presumably by rote. In this study, all the students mentioned the problem of
grammatical terms, abbreviations, and phonetic script. Even
the advanced students noted that they never paid much
attention to these, thus denying themselves potentially impor-
tant information. While guides for dictionary use do exist,
such as the introductory section to the Longman Active Study
Dictionary and the companion workbook for the Oxford
learner dictionaries (Underhill), it is unlikely that the students
in this study took advantage of such guides.

In addition, since dictionary use becomes more profitable as
the user's vocabulary increases, learners need to work on their
general vocabulary as a facilitator of dictionary use. This
conclusion is circular to some extent, since dictionaries are
intended to aid in developing vocabulary.

As was mentioned in the introduction, it is logical to assume
that proficient readers in a foreign language would also be
efficient dictionary users. By the same token, poor readers
would be expected to be weak in both areas. Bensoussan
concluded in her research that advanced students do not need
the dictionary so much, while weak ones cannot use it to their
advantage. This conclusion is reinforced by the current study.
There is a “catch” involved here: proficient foreign-language
students are strong at guessing by context, so that they do not
as a rule need the dictionary. In those cases where they do
refer to it, however, they are generally successful with it. Poor
learners, on the other hand, are less capable of guessing the
meaning of words from context and are therefore in greater
need of a dictionary as a prop. Yet they are not proficient
enough to make efficient use of it.

There is, in fact, a lack of fit between users' needs and
expectations from the dictionary and assumptions made in the
dictionary regarding its users. As was seen in this study, the
words contained in the definition may be at a level of difficulty
such that users in a position to comprehend them are the ones
likely to comprehend the given word to begin with, without
the dictionary.

With regard to future research, it may be useful to replicate
this study using other dictionaries and other pairs of languages
as well. It might also be fruitful to broaden somewhat the
types of process-oriented studies that are done using verbal
report techniques. For example, it might be valuable to
investigate the cases where learners look up a word more than
once because it does not “stick” the first time. There appears
to be a need to investigate what learners do with the
information that they obtain from the dictionary (e.g., write it
down, just make a mental note). Another area for investigation
would be the extent to which dictionary use forces learners to
perform grammatical analysis, while they may well avoid such
analysis in their reading. Finally, it may be useful to compare
learners (especially low-proficiency ones) who are trained in
the use of dictionaries with those who are not.

NOTE

1 It is worth pointing out that the literature on dictionary use
often does not define what is meant by “meaning.” When we
use the term in this paper, we are referring to the conceptual
or cognitive idea that a definition in a dictionary would give a
person.

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APPENDIX A

Read the following sentences and look up the underlined words in the dictionary, first in the English-English dictionary and then in the English-Hebrew one. Then fill in the Hebrew meaning in the space provided.

1. The boats that were lost in the storm were not moored properly.
   moored -

2. The Spanish Inquisition tortured its victims by tying them to the rack.
   rack -

3. Your arguments have no bearing on the issue we are discussing.
   bearing -

4. She is a wonderful cook: a drop of this and a dash of that and the outcome is delicious!
   dash -

5. After the exercise, some of the athletes complained of severe pains in their calves.
   calves -

6. The suspect was questioned for hours, but he kept maintaining his innocence.
   maintaining -

7. The glass at the bottom of the page might help you.
   gloss -

8. You really should go to that new restaurant and try some of their fare.
   fare -

9. When he was a young student he was so poor, he often had to pawn his few valuables in order to buy food.
   pawn -

10. It is such a pity that you slowed down at the last lap; you could have won the race if you hadn’t.
    lap -
APPENDIX B

Read the following passage carefully. Look up the underlined words in the dictionary, if necessary. You may use either English-English or English-Hebrew dictionaries. Fill in the meanings of words in the spaces. Read the passage again and give a short summary of it orally, in Hebrew.

A WORD OF ADVICE

I who am blind can give hint to those who see—one admonition to those who would make full use of the gift of sight: use your eyes as if tomorrow you would be stricken blind. And the same method can be applied to the other senses. Hear the music of voices, the song of a bird, the mighty strains of an orchestra, as if you would be stricken deaf tomorrow. Touch each object you want to touch as if tomorrow your tactile sense would fail. Smell the perfume of flowers, taste with relish each morsel, as if tomorrow you could never smell and taste again. Make the most of every sense, glory in all the facets of pleasure and beauty which the world reveals to you through the several means of contact which nature provides. But of all the senses, sight must be the most delightful.

(Helen Keller)

1. admonition _______ 6. morsel (line 10)
   (line 2)
2. applied _______ 7. glory _______
   (line 5)
3. strains (line 6)
4. tactile _______ 9. reveals (line 13)
   (line 9)
5. relish _______ 10. provides _______
   (line 10)

APPENDIX C

Dictionary Use and Preference Interview

What is your general attitude toward the use of dictionaries?

Do you like using dictionaries?

Do you feel that dictionaries help you?

When do you usually feel that you need the assistance of a dictionary?

Do you have any specific difficulties while using a dictionary?

Which type of dictionary do you prefer? Why?