Using Derivational Morphology to Improve Students' Word Attack Skills

Marisa Singhaphan
Assumption College, Rayong

Abstract: Students were given training in using derivational morphology to help them work out the meanings of new words. Three approaches were used: giving the meaning of the word, identifying its part of speech and guessing the meaning from context. Overall it was found that the effect of the training was beneficial and that the best improvements were made in the area of guessing meanings from context. Analysis of the sub-tasks involved showed that students displayed a superior level of skill in analytical tasks (breaking up a word into its constituent parts) compared to tasks requiring synthetic skills (putting the parts together to create meanings).

Reading is a crucial skill for learners. Rubin and Thompson (1982) point out that to be effective readers, students should be able to read, without the aid of a dictionary, anything published in the foreign language they are learning. A very large amount of vocabulary is obviously needed to reach this point. However, as it is impossible to teach the students the entire vocabulary they need to know, learning to tackle the meaning of unknown words is a useful skill for them to acquire. This article describes an experiment to assess the effectiveness of a strategy to help students deal with unknown vocabulary and to become more independent readers.

Word attack skills and derivational morphology

Nuttall (1982:66) refers to word attack skills as "the skills needed by young children in the process of early reading, but it seems equally relevant to foreign learning students. Both have problems with unfamiliar words, though the problems themselves may be different". In dealing with unfamiliar words, readers can rely on strategies such as structural clues, inferences from the context or morphological information relating to the forms of individual words.

Derivational morphology deals with the structure and formation of words by the use of prefixes, suffixes and roots, each of which can change the meaning or part of speech of a word. This is a common process of word-formation in the English language. For instance, it has been shown that just 20 prefixes and 14 roots can be recombined to create over 14,000 words (Thompson 1958, cited in Nation 1990). A reader with some knowledge of common affixes and roots and the ways in which they combine has a better chance of guessing the meaning of unknown words, especially those of Latin origin. Derivational morphology can therefore play a vital role in helping readers to understand the meaning of unfamiliar words (Hatch & Brown, 1995).

Methodology

The experiment was conducted with the whole class of 34 subjects at the Islamic College of Thailand, a secondary school in Bangkok. The instruments used in the experiment were pre- and post- tests, students' diaries, a teacher's diary and two questionnaires. The materials used in each of three training sessions were designed as prompts and sequenced from less to more complex. The selected words comprised prefix, root and suffix. The selected prefixes (anti-, bi-, bio-, etc.) and suffixes (-al, -able/-ible, etc.) form part of many words that are important and frequently used in English. The roots chosen (colour, way, perfect, etc.) were words familiar to the students since this enabled them to build on their existing knowledge. In the prompts, the selected words were shown both in isolation and in context. This was because a student might encounter unknown words in context as well as in isolation.

Table 1 below shows how the teacher's role gradually reduced during the training sessions as the students took on more responsibility for their own learning:

Table 1. *Vocabulary tasks and evolving roles of teacher and learner*

Teacher's Role	Learner's Role	Tasks
1. Presenting Stage Teacher introduces and explains how derivational morphology can be used to deal with unknown words. After that, she models the application.	The learners observe and are encouraged to participate.	A task or exercise designed by the teacher, and the teacher's modelling are used as a prompt.
2. Transitional Stage The teacher's role diminishes. She withdraws her involvement, simply providing hints when learners encounter difficulties.	The learners begin to take on more of the responsibility for completing the task. They put more effort into applying the prompts rather than copying it correctly.	Various kinds of tasks are provided for the learners. The tasks are more complex than those used in the presenting stage. They can be given for learners to work in groups, pairs and individually.
3. Independent Stage The teacher stops her support. Her role has been shifted from that of coach to that of supportive and sympathetic audience.	The learners can generate prompts by themselves.	No prompts are provided by the teacher. Students can use word attack skills by themselves.

Findings

The researcher aimed to find out students' ability in tackling the unknown words by using derivational morphology according to three different aspects: giving the meaning of the unknown word, identifying its part of speech, and answering questions about the unknown word in context. In comparing the overall results from the pre- and post- tests, it was found that the mean scores of the post-test were higher than those of the pre-test (post-test: $\bar{x} = 14.79$, pre-test: $\bar{x} = 9.29$).

However, a percentage score for individual skills showed that the students improved most in their ability to guess the meaning of new words from context, as shown in Table 2 below:

Table 2. *The means of the three sub-tests:* Giving the meaning; Identifying the part of speech; Guessing the meaning from context

Sub-test	Maximum Score	Pre - Test		Post - Test		The increase in means expressed as a percentage
		Mean	Percentage	Mean	Percentage	
1. Giving the meaning	13	3.91	30.08%	6.32	48.62%	61.63%
2. Identifying the part of speech	13	3.18	24.46%	4.99	38.38%	56.91%
3. Guessing the meaning from context	7	2.10	30.00%	3.49	49.85%	66.17%

Breaking up the words into parts (prefix, root and suffix) is an important step for tackling the meanings of words through derivational morphology. Therefore, an additional column for the post-test was designed to find out the students' ability to identify each part of a word. It was found that the students were able to identify prefixes more correctly than suffixes and roots (the mean scores were: prefix = 10.82, suffix = 8.26 and root = 7.59).

In addition, qualitative data from the questionnaire showed that the students developed positive attitudes towards the use of this strategy and towards learning English.

In sum, the findings confirmed that the students' word attack skills improved after they were trained in vocabulary guessing through derivational morphology and that they developed greater independence and positive attitudes towards the use of this strategy.

Discussion

According to the findings, the effects and implications of derivational morphology on the students' word attack skills are as follows:

The characteristics of affixation affect the students' word attack skills

There were noticeably different results between the scores for prefixes, roots and suffixes. The students achieved higher scores from the part of prefix than the part of suffix and root. This may be a consequence of the following characteristics of the three elements involved:

- Prefixes comprise small units which are limited, frequently used and widely occurring. These characteristics help the students to learn prefixes with ease.
- Suffixes are also limited, but have more complicated characteristics which may confuse the students.
- Roots are the most varied and numerous part of these three elements, having changeable forms which may cause the students the most difficulty.

Students need more training in high level thinking skills

According to the results from the sub-tests on giving the meaning and breaking up words into parts, it was found that the students had high ability in identifying each part of a word. However, their ability in giving the meaning was not as high as the ability in breaking up the words.

While dealing with the unknown vocabulary, the students used different levels of thinking skills. That is, when the unknown vocabulary was broken down into parts, analytic skills – the skills for breaking information down into its constituent parts and specifying the relationship between these parts – were utilized (Arends, 1989). Then, in combining the information from the constituent parts identified through analysis, the students need to employ synthetic skills, i.e. the ability to bring information from various sources to create a new product (Arends, 1989). The results imply that the students may lack the ability to think at a higher cognitive level which involves synthesizing information to create meaning.

References

Arends, R.I. (1989). *Learning to Teach*. International Edition. Singapore: McGraw-Hill.

Hatch, E. & Brown, C. (1995). *Vocabulary, Semantics, and Language Education*. Cambridge: Cambridge University Press.

Kingsley, H.H. & Heffner, E.D. (1984). *Mastering Word Skills: Dictionary Thesaurus Vocabulary*. Columbus: Bell & Howell.

Rubin, J. & Thompson, I. (1982). *How to Be a More Successful Language Learner*. Boston: Heinle & Heinle.

Rosenshine, B. & Meister, C. (1993). "The Use of Scaffolds for Teaching Higher-Level Cognitive Strategies", In Woolfolk, E.A., *Reading & Cases in Educational Psychology*. Boston: Allyn & Bacon.

Scarcella, R.C. & Oxford, R.L. (1992). *The Tapestry of Language Learning: The Individual in the Communicative Classroom*. Boston: Heinle & Heinle.

Williams, M. & Burden, R.L. (1997). *Psychology for Language Teachers: A Social Constructivist Approach*. Cambridge: Cambridge University Press.