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Semantic and Thematic List Learning of Second Language Vocabulary

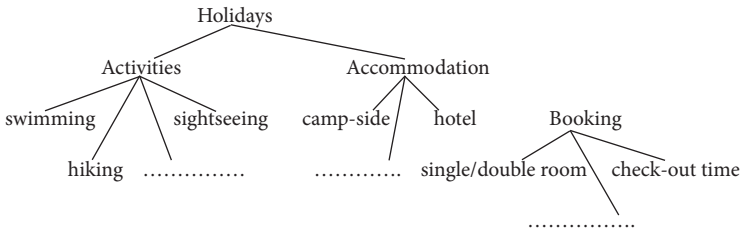
This article overviews research on second language vocabulary instruction with a specific focus on semantic and thematic vocabulary-clustering types. The theoretical benefits associated with both the semantic and thematic approaches, as well as the potential problems associated with them, are discussed. The conclusion drawn is that reinforcing the level of activation of target concepts during learning can lead to facilitation but only if interference from competing items is kept to a minimum. With respect to the incremental nature of vocabulary acquisition, learning programs need to boost learner engagement by embodying systematic, principled, and long-term practices.

Semantic Versus Thematic Clustering

To help students learn the basis of language, that is, vocabulary, researchers have been searching for more efficient ways of learning L2 vocabulary, with previous methods undergoing critical examination and being replaced by more recent and acceptable approaches. One popular comparison has been made between semantic and thematic vocabulary-clustering types. Semantic clusters provide L2 learners with groups of words that are related in their meanings. For example, learners are asked to learn parts of the body, such as: *eye, nose, ear, mouth*, and *chin*; or sets such as: *cashier, clerk, manager, receptionist, secretary, supervisor*, and *typist*. As can be seen, the words within each cluster fall under a covering concept and are consequently gathered together as a result of their shared semantic characteristics. These are often presented as a set of words or semantic clusters and usually have the same headword.

The following exercise can clearly illuminate the way semantic sets can be integrated into the vocabulary section of language-teaching

programs. In this exercise (adopted from McCarthy & O'Dell, 1994, p. 8), some words are grouped under a heading or a more general word in a tree diagram. Here, learners are asked to add more words to the empty places identified by dots.



Different terms are used to refer to this type of grouping: lexical fields, semantic mapping, semantic clusters, semantic fields, semantic sets, and lexical sets. Semantic clusters appear in different types of textbooks and materials because they have been thought to be efficient ways of learning L2 words. Because of some drawbacks associated with the use of semantic clusters, Tinkham (1997) introduced another type of clustering, called thematic clustering and assumed to be a better clustering alternative. Thematic vocabulary sets refer to the arrangement of a group of words that belong to a specific schema. Tinkham (1997) suggested that thematic groups of words can prevent the interference effects caused by the semantic sets. A thematic group that contains words such as *sweater*, *changing room*, *tries on*, *wool*, *striped* belongs to a specific theme. Thus, according to Tinkham, the use of thematic sets in the teaching of L2 vocabulary can lead to a better retention of lexical items. As an example, one can refer to an exercise used in McCarthy and O'Dell's book (2002). The question asks the learners, "Whose job do these things belong to?" In this question, learners are encouraged to find the word appropriate for a group of words categorized according to a certain theme.

EXAMPLE	bucket	ladder	leather	(window cleaner)
1.	board	overhead projector	chalk	
2.	scalpel	mask	forceps	
3.	fax machine	filing cabinet	stapler	
4.	make-up	script	microphone	
5.	tractor	plough	barn	
6.	sewing machine	scissors	needle	

Theories Justifying Semantic Lists

Different theories have backed up the use of semantic sets in vocabulary teaching. Semantic sets have been advocated by many scholars in the field (Hashemi & Gowdasiaei, 2005; Hatch & Brown, 1995; Johnson, 1995; Machalias, 1991; Menon, 1991; Seal, 1991). These researchers assume that semantically related sets of words facilitate the process of L2 vocabulary learning in two ways: (a) the similarity between the lexical items eases the learning task, and (b) they lead the learner to become aware of slight distinctions between the related words.

One such theory is the *semantic fields theory*, which provides evidence for the efficiency of presenting semantically related sets and leads to the assumption that semantic sets can bring about:

1. Common approaches of establishing complex lexical networks (Amer, 1986; Channell, 1988);
2. Efficient and fruitful acquisition of words, in which learning of a new word motivates learning of its neighbors (Seal, 1991; Wajnryb, 1987); and
3. A means of illustrating the distribution of meaning of related lexical items (Dunbar, 1992; Machalias, 1991).

Although the use of semantically related sets of vocabulary items can pose some disadvantages, such as the similarity among the related words, it is significant to note the several advantages associated with their use. Nation (2000) points out the following reasons for teaching L2s semantically related words:

1. It requires less effort to learn words in a set.
2. It is easier to retrieve related words from memory.
3. It helps learners see how knowledge can be organized.
4. It reflects the way such information is stored in the brain.
5. It makes the meaning of words clearer by helping students to see how they relate to and may be differentiated from other words in the set.

It is important to note that the benefits of using semantically related words rely on very specific conditions of learning, such as task characteristics, level of proficiency of the learners, degree of contextualization, and so forth. Thus, the advantages associated with this type of vocabulary learning should not be considered generally as they can differ according to these variables.

Seal (1991) gives support to the effectiveness of semantic sets by

arguing that when words are learned in semantic sets, “the learning of one item can reinforce the learning of another,” as well as facilitate understanding because “items that are similar in meaning can be differentiated” (p. 300).

An examination of the textbooks and learning materials reveals that the use of semantic sets for introducing vocabulary items is a very popular approach. These textbooks employ different representational tools such as charts, diagrams, graphs, and so forth to teach the semantically related sets of words (Brown, 1991; Molinsky & Bliss, 1996; Gairns & Redman, 1986; McCarthy & O’Dell, 1994). McCarthy and O’Dell’s book (1994), *English Vocabulary in Use*, for instance, employs the following table to introduce different adjective types used for the concept of “difficulty.”

Table 1
Adjectives Relating to Difficulty

<i>Adjectives</i>	<i>Meaning</i>	<i>Collocations</i>
Abstruse	difficult to understand	theory, argument, philosopher
Arduous	difficult, tiring, needing much effort	climb, task, journey
Complex	difficult to understand as it has many parts	issue, problem, theory, process
Convoluted	unreasonably long and hard to follow	explanation, sentence, theory
Grueling	extremely tiring and difficult	journey, work, match, expedition
Insufferable	difficult to bear as it is annoying or uncomfortable	behavior, heat, boredom, pain
Obstructive	causing deliberate difficulties	person, measure
Stiff	difficult to beat	opposition, competition
Tough	difficult to deal with or do	time, job, climate, decision
Traumatic	shocking or upsetting	experience, past, childhood
Wayward	challengeable, selfish, and/or hard to control	behavior, child, person

Note: Adopted from McCarthy and O’Dell, 2002.

McCarthy and O'Dell (2002) believe that this way of vocabulary presentation, given that the learning conditions for effective vocabulary learning are met, can enhance learners' noting of the finer-grained distinctions between the closely related sets of items and therefore foster students' knowledge of their patterns of use.

The concept of *semantic mapping*, in which L2 learners arrange L2 vocabulary into groups of related words and show the relationships between them, is closely related to the semantic sets method. This method builds upon the schemata theory and motivates the students to learn the related words by drawing upon their previous knowledge.

Theories Against Semantic Lists

Despite the above-mentioned advantages for the use of semantic sets, numerous scholars in the field argue against the use of semantic sets (Erten & Tekin, 2008; Finkbeiner & Nicol, 2003; Hoshino, 2010; Tagashira, Kida, & Hoshino, 2010; Tinkham, 1997; Waring, 1997). The first opponent of semantic lists was West (1988), who coined the term "catenizing" to refer to the process of chaining semantically related words together. Giving pedagogical reasoning, West argues that semantic sets constitute an unnatural frame for a linguistic group such that semantic sets are not normally encountered by learners in their real lives. In 1993, Tinkham conducted two experiments and concluded that learning semantically related words took a longer time than learning semantically unrelated words. Tinkham's finding suggests that students should not be given words that share the same subordinate head; rather, they should be asked to learn semantically unrelated words.

The study by Waring (1997), too, replicated Tinkham's findings because there was a main effect against the use of semantic sets. Another study by Finkbeiner and Nicol (2003) additionally strengthened conclusions about the undesirable effects of providing L2 words in semantically related sets. Scholars solicited different theories as pieces of evidence for their arguments. One such theory is *interference theory*, according to which when words that are very similar to each other or share the same components, they may interfere with each other and thereby lead to difficulties in their retention. A number of studies in this area have shown that semantic relatedness of a group of words is the major cause of their attrition (Baddeley, 1990; Hoshino, 2010; Papathanasiou, 2009; Tinkham, 1993, 1997; Waring, 1997).

Regarding harmful effects of the semantic sets on L2 vocabulary learning, Papathanasiou (2009) conducted an experiment in which she examined the effects of semantically related sets of words on intermediate and advanced learners' retention. The results indicated that

semantic sets caused greater difficulties for adult beginners but had no effect on young English learners who had reached intermediate proficiency.

In short, interference theory suggests that the similarity between the to-be-learned information and information learned previously leads to interference, in turn leading to learning difficulties.

Another piece of evidence against the use of semantic lists is the *distinctive hypothesis* (Eysenck, 1979). According to this hypothesis, learners can better acquire items that are distinct and dissimilar. The investigations of distinctiveness and memory demonstrated opposite effects of the semantic relatedness in remembering of the lexical information (Hunt & Worthen, 2006; Schmidt, 1985). In these experiments, participants were provided with both semantically related sets of words and distinct and dissimilar lists of vocabulary items. The results of these experiments exhibited greater recall of the distinct lexical items in comparison with the semantically interrelated words of the lists.

Theories Justifying Thematic Lists

Thematic clusters were proposed as a replacement for the semantic lists and turned out to be an attractive proposal to assist learners to prevent the negative effects of the semantic clusters and help them better retain and remember the words. Interference does not occur in thematic clusters and therefore undesirable effects are avoided. When the features of two words overlap too much (as is the case with semantic clusters), then interference probably occurs, whereas if the features of two words share smaller features (i.e., thematic words), then it is likely that one word will not function as a memory trigger for the other words (Hoshino, 2010).

Identifying the negative impacts of semantic sets on the acquisition of L2 words, Tinkham (1997) proposed thematic clustering as an alternative to semantic sets. Thematic clustering refers to a group of words that share a similar schema or frame. Thus, learners categorize the words as themes or schemas in their mental lexical network, which is made possible by use of previous background knowledge. In fact, the main justification for the use of thematic clusters is the *schema theory*. When encountering a topic in reading or listening, the reader activates the schema for that topic and makes use of it to anticipate, infer, and make different kinds of judgments and decisions about it. Schemata embodying background knowledge about the vocabulary exert a profound influence on how well the words will be comprehended, learned, and remembered.

In thematic clustering, then, learners actively arrange the past

reactions or experiences with the new information (Celce-Murcia & Olshtain, 2000). Several scholars reasoned that presenting words in thematic clustering can facilitate the process of vocabulary acquisition and therefore avoid the undesirable effects (e.g., Al-Jabri, 2005; Fillmore & Atkins, 1992; Mirjalali, Jabbari, & Rezai, 2012; Motallebzadeh & Heirany, 2011; Tinkham, 1993, 1997; Waring, 1997). The study by Al-Jabri (2005) found positive effects for the thematic clustering of words on L2 vocabulary learning. In a recent study, Motallebzadeh and Heirany (2011) investigated the effects of thematically listed words on the reading-comprehension performance of Iranian EFL learners. The study confirmed the findings of Tinkham (1997) and Waring (1997). Mirjalali et al. (2012) compared the learnability of words presented thematically and semantically in isolation and in context. Results showed benefits for unrelated sets of words in insulated condition and thematic clusters in contextualized condition. Other studies, however, could not find any significant differences between the use of thematically and semantically related L2 words (Hippner-Page, 2000; Liu, 2003).

Conclusion

The conclusion is that the use of semantic clusters without systematically attending to certain learning specificities (e.g., learners' vocabulary knowledge) can be detrimental to vocabulary learning, but when a group of words has been analyzed and classified in a semantically principled way with due attention to learning factors, they can be used with all learners, healthy or disabled, young or adult. Therefore, there is an undeniable place for the design and use of a semantic curriculum, which encompasses senses, definitions, and the features of the words that can be taught over a longer period. This type of curriculum helps the teacher to diagnose the possible features of the word's meaning the learner has never been taught. Furthermore, by using a semantically oriented curriculum, the teacher can rank the words within their semantic fields in order to identify the easiest ones to instruct and to predict the challenges that will occur so that they require less effort. The case with foreign language learners is that their vocabulary knowledge may be superficially vast but insufficient since they have only an incomplete understanding of the words and the relationships between them. Thus, their vocabulary base lacks a firm and structured foundation. Here, the semantic curriculum can be employed to make up this deficit. Teachers can accomplish this in a very short time by taking the small number of words to be taught and identifying their major features. In other words, teachers can help learners retrieve the required words easily, recognize the organization

of words, and observe the way information can be stored in the brain by using semantically related sets of words and pertinent exercises.

In contrast to the semantic curriculum, in the thematic-clustering type, many areas of the curriculum are connected and integrated within a theme. It allows learning to be more natural and less segmented; it allows literacy to grow progressively, with words connected and with spelling and sentence writing being frequently, yet smoothly, strengthened. It also has the potential to guide integrated ideas to follow easily. The thematic curriculum is based on three main premises (Altinyelken, 2010):

1. Rapid development of literacy, numeracy and life skills at lower primary;
2. The treatment of concepts holistically, under themes of immediate meaning and relevance to the learner; and,
3. The presentation of learning experiences in languages in which the learners are already proficient. (p. 154)

At the same time, the thematic curriculum attempts to adopt a “learner-centered approach” by putting the learner’s interests, experience, and needs at the center of the curriculum. It encourages learners to be active participants in their learning by exploring, observing, and practicing rather than being passive recipients of knowledge (Altinyelken, 2010).

Considering the fact that vocabulary items are best learned naturally in normal language use, it is suggested that vocabularies be integrated into the curriculum and taught in conjunction with other skills. The integration of vocabulary items into the overall curriculum of a language program is clearly a desirable and genuine goal from a pedagogical perspective. What is emphasized in this article, therefore, is the adoption of an integrative approach to teaching vocabularies that should take into account the importance of both the semantic and thematic approaches to vocabulary teaching. It can be a good idea to employ specially designed lessons that can be added to the regular curriculum using both semantic and thematic clustering types depending on the learners’ needs and abilities. Repeated exposure to words before reading the text by means of either semantic or thematic lists can be very promising for the understanding of the text or a concept. The teacher can teach several word-learning strategies to the learners so that they can improve existing vocabulary, organize verbal classes, and remember new words in the text. One such strategy is List, Group, Label or LGL. These three steps of listing, grouping, and labeling are carried out with the collaboration of the teacher and the learners. For

example, in the list step, the teacher first introduces a one- or two-word concept and then the class brainstorms the words or phrases related to it. Next, each learner can prepare a word or phrase with its details such as pronunciation, spelling, grammar, collocations, and so forth, leading to learner-generated lists that can be read aloud by the teacher to the whole class. In addition to vocabulary lists, teachers can make use of other teaching strategies, such as contextual redefinition, language collection sheet, word banks, word maps, root analysis, restructuring reading materials, context skills, and a number of games. Although different word list types are found to foster the vocabulary development of learners, teachers should not restrict themselves only to the word lists and should model effective word-learning strategies such as those mentioned above to the learners. These examples, along with those mentioned previously, can be of invaluable help to teachers to better enhance the vocabulary development of language learners.

It is important to make one more observation: Future investigations can examine the effects of semantic and thematic clustering types on vocabulary retention and learning in multimedia environments. Vocabulary learning is assumed to play a significant role in not only traditional instruction but also a computer-assisted language learning (CALL) program. According to Yun (2011), “The integration of multimedia gloss into L2 reading material has been suggested as an effective way of fostering vocabulary acquisition due to its authenticity, salience, and nonlinearity” (p. 39). The increasing use of multimedia materials for second language teaching offers new lines of research regarding the effectiveness of hypermedia environments for language learning in general and vocabulary acquisition in particular.

Authors

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