Should second language learners be taught vocabulary in clusters of related words?

What this research was about and why it is important

There has long been discussion in the field of second language vocabulary teaching on whether semantically related words (e.g., house pets: dog, cat, rabbit) ought to be taught simultaneously, a technique known as semantic clustering. Teachers and textbook writers often favor semantic clustering, believing it to be helpful for learning. In contrast, many vocabulary researchers now argue against teaching semantically related words together, as it may result in learners confusing the new items (e.g., struggling to remember which new word meant dog instead of cat and vice versa). However, others argue that this very difficulty may lead to improved vocabulary learning over the long term, as the initial confusion may require the learner to engage with new vocabulary more deeply, thus leading to better retention. Furthermore, debate also exists regarding whether the learning of new vocabulary in general, and semantically related vocabulary in particular, is best approached through massing (i.e., with each new word being practiced frequently within a short time frame) or spacing (i.e., a new word being practiced with relatively long gaps between instances). This paper sought to investigate both these issues to see how they may be related, and under what conditions semantically related words are best learned. The results indicated that the use of semantic clustering neither helps nor hinders learning in the long term but can cause confusion in the short term. In addition, spacing proved a more effective approach than massing.

What the researchers did

- 122 Japanese students were recruited from 2 universities in Japan. They had each studied English for 6 years.
- The students were divided into 2 groups. 66 received massed vocabulary instruction, and 56 received spaced instruction.
- The students were taught 48 low frequency English words along with their Japanese equivalent. 24 of the words were semantically related, and 24 were semantically unrelated.
- The semantically related words were divided into 4 sets of 6 words: S1: mammals (e.g., baboon, badger, otter); S2: anatomical organs (e.g., diaphragm, intestine, womb); S3: geographical features (e.g., estuary, ravine, strait); S4: plants (e.g., azalea, camellia, cedar)
- The unrelated words were randomly divided into 4 sets of 6 words (e.g., cistern, insurgent, pall, parable, sardine, venom)
- The research was done in two sessions. In the first session the students were taught the new words using computers. Each student practiced each of the 8 sets of words four times. However, the massed group practiced each set four times back to back, although presented out of sequence (e.g., S1 four times; S5 four times; S3 four times; S8 four times, etc.), while for the spaced group the practice opportunity of each set was separated by the other 7 sets (e.g., S1, S2, S3...S8, S1, S2, S3...S8, S1...). At the end of the first session, the students were tested to judge their learning of the words. In the second session, one week later, the students were retested to see how well they had remembered the words.

What the researchers found

- On the tests in both the first and second sessions, the spaced group learned better than the massed group for both semantically related and unrelated words. However, the effect of spacing was stronger for the unrelated words in regard to long-term retention (i.e., at the second test). This suggests spacing is a more effective means of vocabulary instruction.
- The results suggested that there was no significant difference between the long-term retention of semantically related and unrelated words, suggesting that relatedness neither helps nor hinders learning over the long term.
- However, it was also found that where massing was used, there was a much greater tendency for learners to confuse semantically related words from within one set than for them to confuse semantically unrelated words. This tendency, while present in the spaced group, was not as strong, suggesting again that spacing may be a more effective approach.

Things to consider

- These results suggest that semantic clustering does not affect long term learning of new vocabulary. However, given that it may cause confusion, at least in the short term, the instructors may consider avoiding it, if possible.
- The results from this study support the view that spacing leads to better long term learning of vocabulary than massing. The authors thus argue that teachers ought to present new vocabulary to students on multiple occasions over a relatively long period of time, allowing a time gap between each presentation.


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