

**SPACED REPETITION AND ASSOCIATIONS: HOW TO EFFECTIVELY
MEMORIZE VOCABULARY WHEN LEARNING A FOREIGN LANGUAGE***Sh.R Zaxidova**The English Teacher of the Academic lyceum of Turin Polytechnic University*

Annotation: Vocabulary acquisition is one of the most critical and challenging aspects of foreign language learning. This article explores two scientifically grounded techniques - spaced repetition and associative memorization—that significantly enhance vocabulary retention and recall. The spaced repetition method optimizes review intervals based on memory decay patterns, while associative techniques leverage the brain's preference for vivid imagery and meaningful connections. Combining these methods allows learners to systematically build and retain large vocabularies more efficiently. The article also discusses technological tools, common mistakes to avoid, and ways to personalize the learning process according to individual cognitive styles.

Keywords: spaced repetition, vocabulary learning, associative memory, foreign language acquisition, flashcards, memorization techniques, mnemonics, language learning strategies, Anki, memory retention

Introduction: Learning a foreign language is a complex and multi-stage process in which mastering vocabulary plays a central role. Without sufficient vocabulary, it is impossible to communicate fluently, understand speech, read books, or watch films. However, memorizing new words often presents difficulties, even for highly motivated students.

Many learners experience the frustration of forgetting new words within days or weeks. Vocabulary accumulation slows down, motivation decreases, and progress stalls. Fortunately, there are scientifically proven methods that help to effectively consolidate and retain words — spaced repetition and associative memorization.

Main part: Why Do We Forget Words?

To understand how memorization works, it is important to understand how memory functions. Words initially enter short-term memory. If they are not repeated, they quickly fade away. This phenomenon is well described by Hermann Ebbinghaus' forgetting curve.

His research shows that without repetition, up to 50% of new information may be forgotten after one day, and up to 80% after one week. This is why it is crucial to organize the learning process so that the brain receives reminders at optimal times.

The Spaced Repetition Method

Spaced repetition is based on the idea that each repetition should occur slightly later than the previous one. This approach strengthens neural connections and transfers words from short-term to long-term memory.

Example of a spaced repetition schedule:

1st repetition — immediately after learning.

2nd repetition — after 1 day.

3rd repetition — after 3 days.

4th repetition — after 1 week.

5th repetition — after 1 month.

The exact schedule may vary depending on individual memory characteristics, but the principle remains the same: repetitions continue until the word is firmly memorized.

Technological Tools for Spaced Repetition

In recent years, the use of technology has greatly enhanced the efficiency and accessibility of spaced repetition. Several specialized applications have been developed that automatically implement spaced repetition algorithms, helping learners optimize their review sessions without manually tracking schedules. These tools analyze individual performance, adapt to each learner's memory strength, and present material at the optimal time for review — just before forgetting occurs. This process ensures that information is reinforced precisely when it is most effective for long-term retention.

Some of the most popular and widely used spaced repetition tools include:

Anki

Anki is a free, highly customizable flashcard application based on spaced repetition principles. Its open-source nature allows users to create their own decks, add multimedia elements (such as images, audio, and video), and adjust the review algorithm to suit their personal learning preferences. Anki's flexibility makes it particularly popular among language learners, medical students, and professionals preparing for exams. Additionally, Anki has a large online community that shares pre-made decks for various languages and subjects.

Memrise

Memrise combines spaced repetition with visual associations and gamified learning. The platform often presents new vocabulary with humorous or vivid mnemonics, helping learners create mental associations that make words easier to remember. Its built-in leaderboard, daily goals, and streak counters motivate learners to stay consistent. Memrise also offers curated courses created by both the community and professional linguists, making it a beginner-friendly option for those who prefer a guided learning path.

Quizlet

Quizlet offers pre-made flashcard sets for a wide range of subjects, including languages, science, history, and more. Its learning modes include matching games, tests, writing exercises, and audio pronunciation, in addition to spaced repetition. Quizlet's adaptive "Learn" mode automatically adjusts which flashcards are shown more frequently based on the learner's performance, ensuring difficult terms receive more attention. Its intuitive interface and large user base make it a popular choice for both self-study and classroom settings.

SuperMemo

SuperMemo was one of the first systems developed specifically for spaced repetition, created by Dr. Piotr Wozniak in the late 1980s. SuperMemo's algorithm is highly sophisticated and mathematically optimized based on extensive research into memory retention and forgetting curves. While its interface is more technical and may require a learning curve for new users, SuperMemo offers unparalleled precision for serious learners who want to maximize efficiency. The primary advantage of using these technological tools is automation. Unlike traditional manual review schedules, these apps calculate optimal review intervals based on empirical memory models. As you study, the software tracks your successes and difficulties, then automatically schedules future reviews for each item accordingly. This individualized approach helps maximize retention while minimizing unnecessary repetitions, saving time and making learning far more efficient.

Associative Memorization

Although spaced repetition is highly effective, its power increases even further when combined with associations. The brain more easily remembers vivid images than abstract words. Creating connections between new words and familiar concepts makes the process both enjoyable and efficient.

Examples of associations:

- English word "umbrella" — imagine a person holding a colorful umbrella in the rain.
- German word "Hund" (dog) — visualize a cute puppy.
- French word "fromage" (cheese) — picture a big chunk of Swiss cheese with holes.

The more vivid, unusual, and funny the image, the more firmly it will stick in your memory.

Using Mnemonic Techniques

Mnemonics are systems of techniques that help memorize information through associations, rhymes, stories, and links.

Examples:

- To memorize the English word "bizarre" (strange), think of: "At the bazaar (bizarre), they sell strange things."
- For the German word "Apfel" (apple), imagine an apple with the letter "A" written on it.

Mnemonics are particularly useful for complex, abstract, or hard-to-remember words.

Active Use of New Words

It is crucial not only to memorize words mechanically but also to actively use them in speech, writing, and reading:

- Write short stories using new words.
- Create dialogues.
- Read articles, books, and listen to podcasts in the target language.
- Watch videos with subtitles.

Each real-life use of a word reinforces it naturally in memory.

Mistakes to Avoid

- Trying to memorize huge amounts of vocabulary in a short time (so-called cramming).
- Skipping regular review sessions.
- Memorizing words out of context.
- Relying only on passive methods (e.g., silent reading, copying words without using them).

Personalizing the Process

- Every person has a unique learning style:
- Visual learners benefit from images and flashcards.
- Auditory learners prefer listening and speaking aloud.
- Kinesthetic learners benefit from writing words by hand and using gestures.

Experiment to find the most effective combination of methods for yourself.

Conclusion Vocabulary acquisition is not an inborn talent but rather a science-based process grounded in memory patterns. The combination of spaced repetition and associative



memorization significantly accelerates vocabulary growth, making learning enjoyable and highly effective.

Patience, consistency, and a systematic approach are the keys to success. Even dedicating just 10–15 minutes daily can yield impressive results in just a few months.

Literature:

1. Ebbinghaus, H. (1913). *Memory: A Contribution to Experimental Psychology*.
2. Cepeda, N. J., Pashler, H., Vul, E., Wixted, J. T., & Rohrer, D. (2006). *Psychological Bulletin*
3. Baddeley, A. D. (1990). *Human Memory: Theory and Practice*. Hove: Lawrence Erlbaum Associates.
4. Nation, I. S. P. (2001). *Learning Vocabulary in Another Language*. Cambridge: Cambridge University Press.
5. Hulstijn, J. H. (2001). Intentional and incidental second-language vocabulary learning: A reappraisal of elaboration, rehearsal and automaticity. In P. Robinson (Ed.), *Cognition and Second Language Instruction* (pp. 258-286). Cambridge University Press.
6. Wozniak, P. A. (1990). *Optimization of learning*. SuperMemo World.
7. Karpicke, J. D., & Roediger, H. L. (2008). The critical importance of retrieval for learning. <https://doi.org/10.1126/science.1152408>
8. Atkinson, R. C., & Raugh, M. R. (1975). An application of the mnemonic keyword method to the acquisition of a Russian vocabulary. *Journal of Experimental Psychology: Human Learning and Memory*, 104(2), 126-133.