



Making Room to Learn: Working Memory in the World Language Classroom

By Irene A. Zingg

You planned the perfect lesson, explained everything clearly—and still, your students forget. Why does this happen? Often, the problem isn't effort. It's working memory: the brain's limited mental workspace. In this article, we'll explore how it works, what overload looks like, and how small shifts in instruction can make a big difference.

What Is Working Memory?

"Working memory is the retention of a small amount of information in a readily accessible form, which facilitates planning, comprehension, reasoning, and problem-solving" (Cowan, 2014, p. 197). Think of this as a mental whiteboard that allows students to hold onto and work with information in real time.

However, this workspace is limited. Research suggests that most people can actively hold about four chunks of information at a time, not the widely cited seven (Cowan, 2001). When more information is introduced than the brain can manage, students experience cognitive overload, which can lead to confusion, forgotten instructions, or mistakes they wouldn't normally make.

What Overload Looks Like in the Language Classroom

In language classes, students are often asked to hold multiple pieces of information in their minds at once. Picture this: You introduce a new verb tense and ask students to write sentences. Students need to remember:

- The verb tenses
- The strategies and rules to determine which tense is appropriate
- The type of verb (regular, irregular, reflexive, etc.)
- The conjugations
- The spelling
- The stem changes
- Your instructions
- The idea they want to communicate

Novice level students often remember each element separately, placing greater strain on working memory. Advanced level students, by contrast, can group elements into a single unit, making recall more efficient. This process is described by "chunking theory," which states that information can be organized into larger, meaningful units to reduce the limits of working memory (Miller, 1956; Gobet et al., 2001). "A chunk reduces the load on working memory via retrieval of a compact chunk representation from long-term memory that replaces the representations of individual elements of the chunk" (Thalmann, Souza, & Oberauer, 2019, p. 37). Similarly, Bransford (2000) notes that, "Experts notice features and meaningful patterns of information that are not noticed by novices ... [and] are able to flexibly retrieve important aspects of their knowledge with little attentional effort" (p. 31).

The *ACTFL Proficiency Guidelines 2024* (ACTFL, 2024) closely align with these findings. At the Novice level, learners rely on memorized words and short phrases, recalling items separately

much like isolated elements in working memory. As they move to the Intermediate and Advanced levels, they begin to connect words and phrases into longer sentences, showing the ability to chunk language into larger, more meaningful units.

The brain is a powerful statistical processor; with enough exposure and experience, it begins to predict the most likely and logical options in a given context, reducing cognitive load and supporting faster, more efficient learning (Dehaene, 2021). However, our students are learning a new language and do not yet have this ability. So, let's not kid ourselves; something that seems simple to us is not necessarily simple for them.

How many times have you seen students use infinitives instead of conjugated verbs, or make what they call “silly mistakes”—errors in things they know but momentarily forget? In my experience, this happens frequently. These kinds of slip-ups are often signs of working memory overload, not a lack of effort or understanding. Realizing this changed the way I see my students and it's helped me support them more effectively with greater empathy, clarity, and patience.

When Emotion Fills the Room

Emotions play a powerful role in how students process, retain, and use language. Negative emotions—anxiety, frustration, self-doubt—take up space in working memory. This leaves fewer cognitive resources for vocabulary, grammar, or instructions. A student might forget something they clearly knew—not because they weren't prepared, but because their mental energy is being used to manage emotional stress.

When that stress becomes chronic, the effects go deeper. High levels of cortisol, the hormone released during stress, can impair focus, memory, and learning (Córdova et al., 2023). Over time, students may become less flexible in their thinking, struggle to retain new material, and lose confidence in their abilities (Ankri, Braw, & Meiron, 2023).

Moreover, emotional stress doesn't just interfere with learning in the moment, it can also shape students' long-term attitudes toward language learning. When learners repeatedly associate classwork with feelings of failure or embarrassment, they may withdraw, not because they don't care, but because they're trying to avoid discomfort (Raio & Phelps, 2015; Pittenger & Duman, 2008).

But emotions can also fuel learning. I once had a student named Omar. He was bright, perceptive, and terrified. The only non-native Spanish speaker in a Heritage Speakers class, he felt out of place. At first, he considered dropping the course, but I encouraged him to stay. In the initial assignments, his writing showed recurring issues with grammar, particularly verb conjugations and gender/number agreement.



LEFT: Reconstructing a poem's structure with Legos, making abstract language visible and manageable.



RIGHT: Students create a hand-drawn map to practice giving directions in Spanish, anchoring language in a meaningful, memorable context.

Still, his effort was unmistakable. When I asked him to explain what he would do differently next time, he answered in Spanish with clarity and accuracy, demonstrating strong communication skills. That moment reframed my perspective: His strength lay not in isolated grammar forms but in his ability to convey meaning effectively.

A few weeks later, during a class discussion, one of his classmates turned to him and said, “I'm impressed by your knowledge—and your bravery.” That moment changed everything. Omar grew into one of the strongest voices in the room, and by the end of the year, he was one of the best students I've ever taught.

The *ACTFL Proficiency Guidelines 2024* (ACTFL, 2024) remind us that communication—not perfect grammar—is the central goal of language learning. Accuracy develops over time as students move from Novice to Advanced levels, but confidence in expressing meaning is what fuels growth. Omar's progress illustrates how focusing on communication can transform isolated language struggles into memorable steps toward proficiency. His journey showed me that when students feel empowered to communicate, they also build the confidence that supports cognitive growth and long-term achievement.

Creating Room for Learning

When working memory overloads, a small shift—slowing down, simplifying the task, or reviewing one step at a time—can make a big difference. Sometimes what students need most isn't more content but more time with it. Rest and repetition may not

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be the first things we think of when planning instruction, but both play a quiet and essential role in how students absorb and retain language.

Getting enough sleep helps students focus, stay present, and store what they've learned. Research continues to show that sleep plays a crucial role in preserving and consolidating memory (Dragoi, 2021). Similarly, spacing key concepts over time through repeated exposure, small reviews, or varied activities gives the brain a better chance to process new material and move it into long-term memory. Leaving intervals between trying to master information and processes improves our ability to retain and transfer whatever we're trying to learn (Didau, 2025). When ideas are revisited across days instead of being rushed, students build confidence through repeated exposure and clearer understanding.

There's not one single method to accommodate working memory constraints, but there are some gentle adjustments that can lighten the cognitive load and help students remain engaged. These strategies don't require a major pedagogical overhaul, merely thoughtful adjustments that can make a big difference.

- Break new information into manageable chunks
- Connect new material to what students already know
- Keep instructions simple—three or four steps at most
- Use visuals, gestures, and cognates to support meaning
- Let students use notes or guides during early practice

- Return to key concepts across multiple days and contexts
- Sequence tasks by complexity: reading and listening before writing and speaking
- Include varied review methods like games, skits, short readings, or interviews
- Pay attention to signs of overwhelm and slow down when needed
- Maintain a calm, supportive classroom climate that encourages risk-taking

Final Thoughts

In a classroom that respects the limits of working memory, students aren't just more successful, they're more confident, more engaged, and more likely to keep learning. This intentional approach not only supports immediate comprehension but also builds a strong foundation for long-term language growth.

By designing lessons that work *with* the brain—rather than *against* it—we reduce overload and help students absorb and apply what they've learned. Sometimes, doing a little less—but with greater clarity—creates the space students need to succeed. And in those moments, we remind them that learning a language isn't just possible, it can be natural, meaningful, and deeply rewarding.

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