

SCAFFOLDING STUDENTS IN ENHANCING WORKING MEMORY

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Memory is a powerful intellectual tool that helps us transform, store, and retrieve information as needed. Memory is a significant tool for students in assimilating the knowledge and skills learned in school. Academic methodology has shifted far from rote memorization processes, factual information, and formulas. Although there is a greater emphasis on reasoning and problem-solving in education today, memory is still important for students.

The educational process activates diverse aspects of cognition, such as working memory. Working memory is responsible for retaining and utilizing information stored in short-term memory. It stores new information so that the brain can use it and connect it to other relevant data. Working memory has been discovered to be operated on and utilized during learning activities such as reasoning and problem-solving. Working memory is commonly used in education and daily life in activities such as reading and navigating.

Working memory is the conscious method and management of information needed to perform complicated tasks like learning, reasoning, and the ability to comprehend. It has been characterized as the conductor of the brain. Working memory has long been regarded as an important aspect of learning, but as the focus on academic standards has transitioned from rote memorization toward the competencies needed to acquire new information, working memory has taken prominence. A student's ability to stay focused on schoolwork necessitates the use of working memory to process and absorb information. Learners who have a great working memory are more likely to sustain focus and attention in a range of academic environments. They can be left to

operate individually because they can handle and remember instructions and task objectives.

As a result, working memory is an important cognitive skill for both learners and teachers. As a teacher, you understand how important it is to be able to keep mental agility and competence in order to manage numerous variables in everyday teachings, such as learners' prior knowledge, the main objective and goal of a learning experience, the sequential instructional experiences, time restraints, and disruptions throughout the school day.

Students use their working memory to figure out the meaning of new words they come across while reading, as well as to decide which mathematical function to apply to a problem that their teacher has just jotted down on the whiteboard.

Working memory can be improved in the classroom and in general by using the right tools and techniques. Working memory is harmed by an overload of information. Working memory allows students to hold and manipulate information in their minds, and it is often referred to as a mental workspace. It aids students in remaining focused and aware of their surroundings. Games and exercises are the most effective ways to improve working memory; examples are provided below.

Ways to Optimize Working Memory

Assimilating Prior Knowledge and New Knowledge Together

Prior knowledge activation is a strategy that makes it easier to grasp when you understand one abstract idea and use a frame of reference to comprehend more about subject matters. Prior knowledge serves as a foundation upon which skills and knowledge can be built. Teachers should discover what their learners already know about particular skills in order to devote more time and energy to impart new concepts.

This technique compels learners to obtain previously learned information and enhances efficacy in what they need to know and understand. This process assists in priming the brain and distinguishing between what they already understand and what they need to acquire. Education is a way of making connections across all disciplines. During this type of simulation, students' self-esteem and confidence grow.

Integrating Brain Breaks in Class Instruction

Brain breaks are essential in the classroom. During these breaks, the brain is not at rest, but rather in default mode, where it performs other critical learning strategies. Many of these incorporate memories, connecting dots, and making connections between different data sets. Learning is not in the mood to share knowledge if there are no breaks. Students can regain focus by taking brain breaks. Our brains do not function well when they are overworked, so it is critical to include breaks during the school day.

Active brain breaks are beneficial because they allow students to improve their mood, motivation, and cognitive functioning. Students also require time to interact with and socialize with one another, which allows them to be creative and stimulates their curiosity. This procedure allows for learning development.

Developing Multisensory Activities in Regular Basis

Because students' brains have needs and strengths, this type of learning helps them learn appropriately. Teachers must be aware of how information is carried into the school environment, as we all have different learning styles. Video/pictographic, auditory, tactile, and kinesthetic learning are examples of multisensory learning. Using learning processes while teaching aids in the transfer of knowledge from short-term to long-term memory. This significantly improves the ability to retain skills and achieve positive learning outcomes. Teachers should teach lessons that they enjoy, and students will follow suit.

Have Students Teach Lessons

Learners retain 90% of what they teach others. Teaching a lesson is an excellent example of how students retain nearly all of what they are expected to know. Another example of students teaching a lesson is peer tutoring. Because the information must be learned first and then taught to others, this is one of the most effective ways to improve working memory; there is a deeper understanding of the subject matter.

References:

<https://www.kent-teach.com/Blog/post/2021/09/21/the-importance-of-working-memory-in-the-classroom.aspx>

<https://www.edutopia.org/blog/put-working-memory-to-work-donna-wilson-marcus-conyers>

<https://www.teachhub.com/professional-development/2021/10/how-to-enhance-working-memory-in-your-classroom/>