

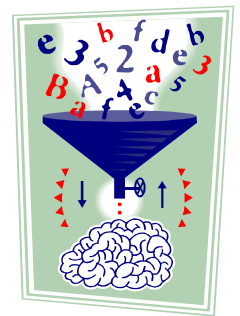
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Learning Support Team

Supporting Verbal Working Memory

The weak working memory profile:

- Normal social relationships with peers
- Reserved in group activities
- Poor academic progress in reading and maths
- Difficulties in following instructions
- Problems with learning activities that require both storage and processing
- Place keeping activities
- Appears to be inattentive, to have short attention span and to be distractible.



Reduce working memory loads

- Reduce the amount of material
e.g. use shorter sentences or cut down the number of steps in an instruction.
- Increase the meaningfulness and familiarity of material
e.g. review a topic before the learner starts to work on a memory-demanding activity.
- Simplify mental processing
e.g. simplify the grammatical structure of sentences i.e. Don't use embedded clauses (*The boy who was carried by the girl had red hair* would be better written/said as *The girl carried the boy with red hair*) and unusual structures (*The horse which raced past the barn fell* would be more easily understood as *The horse fell as it raced past the barn*).
- Restructure complex tasks
Where appropriate, break down multi-step tasks into separate independent stages. The learner would need to complete each one before the necessary information to guide the learner into the next stage is given.

Be prepared to repeat

- Employ strategies that tailor repetition opportunities to the needs of the individual learner. Encourage the learner to request repetition when necessary and praise the learner when this occurs.
- Partner a learner with poor working memory with a learner who has good memory abilities. Remember to acknowledge the value of the pupil who is acting as the 'memory guide'.

Encourage the use of memory aids

- Writing aids
Provide the learner with written spellings for words they may need during the lesson. These could be in the form of; wall charts, spellings written on the class board, flash cards, word strips, word blocks, and personalised dictionaries. If resources are within the reach of the learner, they are more likely to be used rather than physically distant aids.
- Mathematical aids
Supply three dimensional objects that can be easily counted e.g. cubes, beads and counters. Devices such as abaci and unifix blocks are good for helping establish counting skills. Older learners may find devices such as multiplication grids and calculators useful. Specific needs can also be addressed with the use of discrete memory cards which supply information that the learner is likely to need, these will need to be used many times to promote familiarity.
- Audio Devices
Recording devices can provide a reminder for verbal material such as lists of instructions and more detailed content of learning activities.
- Computer software
Educational computer programs, interactive whiteboards and digital notepads provide opportunities for pupils to generate prompts for themselves. This could be by way of pointing and clicking on icons which then supply useful information. Pupils will need to be given training to be able to access these devices.

Develop the learner's use of strategies for supporting memory

- Request help
Encourage learners of all ages to ask for help when important information has been forgotten, providing the opportunity to recover from working memory failures. Praise the pupil when this occurs. Also discuss with the learner who he or she should ask for assistance in different situations, i.e. teacher, TA or other learners (e.g. a nominated memory guide).
- Rehearsal
Rehearse verbal information that only has to be remembered for a brief period of time. This is achieved by repeating a limited amount of verbal material, either silently or aloud. This can prolong the content of verbal

- short-term memory, provided that not too much information is rehearsed. Full attention with no distractions is required.
- Note-taking
Learners with basic literacy skills will benefit from using written notes to support them on complex or prolonged activities with several steps or stages. They should be encouraged to write down important information they will need to guide themselves through the activity.
 - Using long-term memory
To offset the demands placed on working memory by an activity, encourage the learner to rely on long term memory wherever possible, by remembering material in terms of meaningful chunks rather than lengthy sequences of information. Acronyms for instructions may be useful e.g. SSS – check for Sense, Sentences, Spelling. Through repeated use this would become part of the long term memory.
 - Place-keeping and organisational strategies
Encourage learners to find ways of breaking down tasks into their component parts and then treat each part as a separate task to be completed before moving on to the next. It is important for the learner to find a way of recording progress as far as s/he has got in the task, as this can reduce the risk of place-keeping errors.

Ideas taken from

Gathercole, S & Packiam Alloway, T 2009. *Working Memory and Learning*
London:Sage