The four components of WMM

handout number 2.10

Activity type Consolidation

The WMM can be quite confusing. This exercise requires students to fill out a table describing the main purpose of each of the four components, their capacity and their coding. (Note that capacity and coding in the WMM are specifically mentioned in the specification.)

We suggest that they do this first with the book in front of them and they then have a useful revision aid in the form of the completed table.

Practical use

Homework activity

Additional notes

The table produced from this exercise can then be used later (nearer the exam) as a test or as a revision aid.

Answers

COMPONENT	Main purpose	Capacity	Coding
Central executive	To receive information from the visuospatial sketchpad, the phonological loop, from perception and from long-term memory and then sift, sort and combine this information until decisions are reached. Reasoning and decision making.	Limited	Modality free (not limited to sight or sound or any one sense since it needs to manipulate all manner of information).
Phonological loop (inner voice)	To hold words and rehearse any words that are currently being considered (by talking to yourself).	2 seconds' worth of information.	Acoustic
Visuospatial sketchpad (inner eye)	To hold static images and to manipulate them.	3–4 objects.	Visual
Episodic buffer	To provide a temporary store for information received by the central executive and maintain a sense of time frequency. To link LTM to wider cognitive processes such as perception.	Limited – about 4 chunks.	Modality free (like central executive).

Working memory in action

handout number 2.11

Activity type Application

This handout gives a very brief introduction to the WMM and then requires students to apply it to an everyday situation – shopping for clothes!

Practical use

Class exercise, probably paired activity but could be done individually.

Additional notes

This could act as stimulus material for an introduction to the WMM rather than a question sheet. In this case, the teacher would talk through the scenario and explain the role of each of the component parts in the WMM.

Logie (1999) is mentioned on the sheet. The reference is: Logie, R.H. (1999): Working Memory. *The Psychologist*, 12(4), 174–179.

Answers

1. Seeing the trousers and jumper. Imagining (picturing) what they would look like 'on', what they might look like with other clothes, what they might look like dirty or creased.
2. Anything that involves visual images (using the inner eye) such as a scene in which you are wearing the outfit to school, college, to the pub; what your partner's reaction may be when seeing you wearing them.
3. Thinking about (i.e. hearing yourself recounting) how much money is in the bank, when you would wear the outfits, when you next get some money.
4. Anything that involves the inner voice ('talking to yourself'), e.g. thinking about how long it may take to pay for the outfits if bought on a credit card; what your mum might say about you spending the money; how your friends might react when they see the outfits.
5. There are many examples. How much is in the bank account; how near the limit you are on the credit card; when you next get some money. How to do the necessary calculations of affordability; how easily materials used for the clothes crease or show the dirt; what events you have in which it would be appropriate to wear the clothes; what other shops may charge for such clothes.

Design a memory poster

Activity type Idea

Design a poster on A2 to illustrate both the MSM and the WMM in diagrammatic form. Do this large enough to incorporate the following features:

- In the MSM diagram the coding, capacity and duration is included in each store.
- In the WMM diagram the function and other essential features are included in each of the component parts.

Practical use

Paired activity or homework

Additional notes

Obviously this can be split into two separate parts to be completed at different stages in the course.

Working memory model on trial

Activity type Idea

Set up a mini debate with two teams – one side arguing that the working memory model is brilliant … supported by plenty of scientific evidence, etc., and the other arguing that there are so many problems with it that we should not have to bother learning it at all!

Depending on numbers in the class, this could be a done within small groups or the whole class. In either arrangement there should be a couple of students speaking for and against the model.

Practical use

Small group discussion or full class activity

Additional notes

Would make a good activity at the end of the lesson and could lead into an evaluation question for homework!