



What I learned about learning maths while watching TV ads

Rhonda Faragher

TV advertisements are big business. They have a big job to do to make us buy products we may know nothing about. Advertisers know a lot about learning because they want us to learn about their product in the easiest, most effective way. We can make use of their techniques to teach mathematics.

The 'little bit often' rule

Unless we are insomniacs, most of us won't watch the infomercials on late night TV that run for a full program. Advertisers know that they have to catch us while we are watching other programs. They use the 'little bit often' rule. They give us short ads – from 30 seconds to 90 seconds – but show the same ad often. Sometimes, you will even see the same ad in the one advertisement break.

This rule is an effective way of learning. We need to have information given to us in small amounts and we have to see that information often enough so that we don't forget it. With mathematics, it is much better to have short bursts of important ideas repeated many times than to have one long session.

For learners with difficulties with memory, this approach is particularly effective as it provides the learner with opportunities to learn, remember and make connections with other learning.

Pick out the big ideas of mathematics for this special focus, for example:

- Counting. If your child is having trouble remembering the sequence 14, 15, 16, (as my daughter did), whenever you remember say the sequence aloud.

- Money is another big one. Every time you use a coin, hold it up and say what it is. You might want to focus on one coin at a time eg a dollar, before moving to another type.
- Encourage learners when old enough to wear a watch (analogue gives a good visual cue to the passing of time) and every hour or so, draw their attention to the time.

Prime time

Advertisers will pay top money for the best slots. Often, the station will reserve the first and last advertisement in a slot for their own advertisements. They know that these are 'prime time' slots. People remember the first and last items in a list better than those in the middle. When teaching mathematics, the beginning and the conclusion of the lesson will be remembered best by the learner. These should be phases of the lesson that contain important information.

Advertisers also want slots when most people are watching. We need to teach our students when they are at their most alert. For some this will be in the morning, but not all. Teenagers are notorious for waiting till the afternoon to hit their stride! We need to know our students to find their best time.

Slogans for the big ideas

Many of the most effective advertisements have slogans to help people remember the big ideas. This technique is useful in mathematics. Teachers (including parents!) need to identify the important ideas in the material they are teaching. These can be given a short title or phrase to help the learner remember what they are doing. For example, if you are teaching the different combination of numbers that add to 10, you could call this 'make 10' or 'benchmarks to 10' or 'number bonds to 10'. My son used to call these 'rainbow facts' because his teacher drew this diagram (right) when teaching them.

The slogans can then become a label to attach the concept in the memory of the learner.



'Rainbow facts' to help teach number bonds to 10

Use the visual

Apart from radio, most advertisements make use of visual information. Carefully chosen images support the message. In mathematics, we need to make considerable use of the visual. There is evidence that much mathematical thinking occurs on a 'sketchpad' in the brain (Baddeley, 2003), and not through natural language. We can assist our learners by making careful use of visual information in the form of real objects, diagrams, pictures and symbols.

Advertisements on television are rarely silent, though. Just because there is a focus on the visual does not mean there should not be auditory information provided as well. Students need to have language to link to the visual images they are forming in their brain. There is a translation process that occurs to change what is visualised into what can be communicated to others. Language is a powerful mechanism for storing concepts in memory.

As we are teaching, provide language alongside visual work. Use spoken language and write words as well. Some teachers write a sentence or two at the end of a teaching session for students to put in their note books. A sentence strip can be put on the fridge at home and referred to later (bringing back the 'little bit often' rule).

The element of surprise

A very successful advertisement on Australian television had the catch phrase: 'Which bank?' followed by a pause and then the name of the advertised bank was displayed. This ad was effective because it gave viewers time to wonder what the product was and this engagement encouraged thinking about the product and remembering the brand. In teaching, we can use this pausing for the same effect. We can ask a question, pause and then

reveal the answer. In between asking the question and revealing the answer, we can watch the student and if they know the answer, we can let them respond, otherwise, we can supply the answer. Revealing the answer models the response for the student. We can model in this way until the student is able to give the response.

Break the learning into small steps

Advertisers have a strategy of introducing a new product or concept in small steps. Firstly, they might heighten our interest, then once we are engaged, offer us a small piece of information about the product. Once we know a little, we can be introduced to the finer detail. An example of this was used in an advertising campaign for a new insurance product. The slogan *the power of 'un'* was displayed everywhere from the sides of buses to full-page advertisements in newspapers. Once people were asking what on earth the power of 'un' could be, new ads appeared with albeit ugly 'unwords' such as 'unworry'. The public was ready to find out it was about insurance.

In teaching mathematics, we need to break learning into small steps (see Mighton's book (2003) for a way to do this). We need to engage the learner – sometimes so the learner will see a need for mathematics, but other times because the mathematics is fascinating in its own right. Once we have the learner interested in knowing more, we need to make each piece of information small enough for the learner to follow and experience success before we continue on.

Learning in small steps is sometimes known as task analysis. It can be very effective in mathematics when there is a set procedure to be learnt. It is helpful for learners who find learning difficult as it allows them to accomplish each step.

Ads teach – they don't test

Ads tell us and show us what they want us to know. Ads don't test us or make us play the 'guess what's in the teacher's head' game. If we ask a question and we already know the answer, we are testing, not teaching!

Of course, we ask questions to find out if the learner is learning! We need to know what they are thinking and if they understand what we are teaching. One approach to overcome this conundrum is to ask a question and then pause to see if the student can answer. If it is clear they do not know, we need to offer support for them. Beware! Some students with learning difficulties can require a long response time. If we jump in too soon to tell them, they will not gain practice in processing their response.

Modelling learning is an important way to teach mathematics. We use this to show learners the correct response and help them to copy us. One approach can be to work alongside the student. For example, if we are using a number line to calculate $9-5$, we could have a number line and our student could have their own. Talk out loud saying what you are doing. "I'm going to start at 9. I'll colour a dot on the 9. I now need to count back to the left." [Draw jumps on the number line going 5 to the left]. "That's 5 taken away. I'm at 4. I'll colour in 4. The answer to $9-5$ is 4". Do other examples and invite the learners to copy you or join in when they are ready.

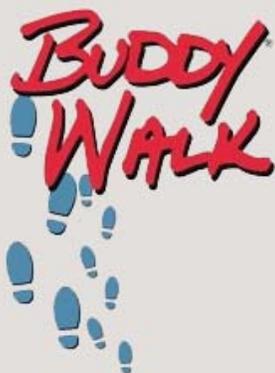
Learning is fun! We are all experts at it. It is harder for learners with Down syndrome to learn some things than others. Mathematics seems to be a particular challenge for many. If we make use of techniques that advertisers use, we can give our learners the best chance to access an important and enjoyable subject.

References

Baddeley, A D (2003). **Working memory: looking back and looking forward.** *Nature Reviews. Neuroscience*, 4 (October), 829-839

Mighton, J (2003). **The myth of ability.** House of Anansi Press Inc

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BUDDY WALK - AUSTRALIA 2011

It's time to start organising for Buddy Walk - Australia again.

WAGGA WAGGA: **SATURDAY 15th OCTOBER**

MELBOURNE: **SUNDAY 16th OCTOBER**

SYDNEY: **SUNDAY 16th OCTOBER**

NEWCASTLE: **SUNDAY 16th OCTOBER**

CANBERRA: **SATURDAY 22nd OCTOBER**

HORSHAM: **SUNDAY 23rd OCTOBER**

Contact Down Syndrome Victoria or Down Syndrome NSW for all venue, registration and program details