If you are still with me, I imagine that you have understood and hopefully tried out the 5 mnemonic techniques detailed in Series One. To recap, they were my favourite: the Journey, which couples well with Linking; and is necessary for lists, dates, and long numbers - the three numerical systems: the Shape technique, using the shape of numbers (1-10), the Rhyming technique, using the nursery rhyme we all learned as children (1-20) and finally, the Major System, based on the 10 sounds of consonants which takes numbering up into the thousands.

Having put all that effort into learning material, you will wish to put that information into long-term memory. Long-term memory is anything you remember that happened more than a few minutes ago. Things you remember are not of equal strength. Most people will know that London is the capital of England, but other things are weaker and need prompting or reminding. This prompting and reminding are precisely what these techniques and exercises in mnemonics have been all about.

It is a long, long time since I was at school and things that I was not using daily have all faded away. Reading, writing, and arithmetic I learned at primary school, and I use them daily, but in senior school after 5 years of concentrated study on all those other subjects that I learned back then, I now find that I have mostly lost that information. I was quite good at history but even there, all that I retained was just one fact: that 1832 was the year of the Reform Act and it was probably the quirky phrase 'Rotten Boroughs' that made that piece of information stick. As for the panic and last-minute revision on the morning bus and right up until we filed into the exam hall - ugh!

So, it is most important to be able to retain information learned, and the best method of doing this is to use the Interval Review system, often called Interval Repetition. I prefer to use the word 'Review' because it is *definitely* not repetition.

Learning by repetition is a bit like putting needles in a haystack: put enough needles in and you stand a chance of finding one, but these mnemonic techniques are based on the way your brain works which is by making connections, but you also need to review what you have learned, or you will lose it.

A large number of studies have been done about how the brain remembers and one of the first men to do this was Hermann Ebbinghaus, a 19th-century German psychologist. He discovered that we tend to remember things at the beginning and the end of a study and things that were unusual. He also described the forgetting curve, which is the loss of information that you have just learned. The sharpest decline occurs in the first twenty minutes and if you forget much that you have learned in the first hour after committing it to memory you need to follow a schedule of spaced reviewing.

Spaced Repetition

A schedule called spaced repetition was published in a paper by Paul Pimsleur in 1967. IT IS NOT THE SAME AS REPEATING EVERYTHING OVER AND OVER and so I prefer to use the phrase Spaced or Interval Reviewing, which is reviewing what you have learned at spaced intervals - just at the point when you might forget it. It's a bit

like watering a plant; to avoid overwatering, only water at the point when it needs it. With spaced reviewing, only review information at the point when you might forget it – and don't overwater or rather- waste your time looking at stuff you already know. Remember this system cuts out time wasted reviewing material you already know and means you focus on information that you find difficult to remember.

Those intervals when you review will change with different individuals but as a guide, the intervals published in Pimsleur's paper were: 5 seconds, 25 seconds, 2 minutes, 10 minutes, 1 hour, 5 hours, 1 day, 5 days, 25 days, 4 months, and 2 years.

From this you can see that although you need to review your material quite a lot initially, after a week it is only a month later and then 4 months later, and then 2 years!

Now you can appreciate how - even if you are doing a 3-year university degree - when you come to take your papers, you really will know a whole 3 years' worth of information without the mad, soul-destroying effort of revision at the last moment.

Pimsleur was involved with foreign language learning and for our present needs we probably do not need something so rigorous.

Most people cannot concentrate for longer than twenty to forty minutes without a break, so if we put your study period at 20 minutes you will need to review halfway through at 10 minutes. If your recall is weak after 10 minutes, then **shorten** the time before review. If you are happy with the results, then leave it for an hour. If the information is still there, then leave it for a day. If not, repeat the process of the previous day. If you can recall the information after a day, you can leave it for a week. If your weekly review is satisfactory, you need not look at it again for a month. Then 3 months and then a further 6 months, by which time I imagine the exams will be upon you.

If it seems a lot of reviews just remember *that 'forgetting curve'* and nothing can be as bad as trying to cram everything in the last few weeks before the exams.

The good news is that Ebbinghaus discovered that even when he made no effort to review stuff that he had learned when he went back to relearn it - *his learning curve was much shorter.* However, it is much better not to forget it in the first place.

Break up your study period into shorter sessions of anything between 20 – 40 minutes. This is because you can more easily recall things that you studied at the beginning and at the end of a session – it is the bit in the middle that gets hazy. So, if you have broken up a long period of study into shorter blocks with a short respite in between, you have more beginnings and endings that you are more likely to remember without even trying, compared to one beginning and one ending if you slog away for hours without a break. I know I am repeating myself, but these recommendations **are important,** and I consider them worth repeating. Incidentally, the breaks should be short – time to stand up, drink a glass of water, and walk around the room, do not nip downstairs to watch an episode of Coronation Street or East Enders.

There are no exercises in this podcast only my recommendation to try this system of review to retain the information you have learned.

In my next podcast, I will describe the best way to study and a suggested way to create a file for the information you wish to remember and review, following the Interval Reviewing or Spaced Repetition system. In the Transcript of that podcast, I will also give a sample spreadsheet file. I will also touch on the value of mind mapping.

So more than ever, use it or lose it and I hope to see you next time.