

Guide to:

Effective Revision

It's the time of year where students are poring over their books, trying to ensure they are prepared for their exams. Revision charts, highlighter pens and sticky notes around the room are some of the methods people use to ensure information stays in their mind.

Popular revision techniques include re-reading notes, summarising them and highlighting the important points. Others involve testing knowledge and using mnemonics - ways of helping recall facts and lists, or creating visual representations of the knowledge.

However, Prof John Dunlosky, of Kent State University has carried out extensive research into Revision Methods and how memory works. He and his colleagues reviewed 1,000 scientific studies looking at 10 of the most popular revision strategies to assess their effectiveness.

The Techniques and How They Measure Up

- **Elaborative interrogation** - being able to explain a point or fact - **MODERATE**
- **Self-explanation** - how a problem was solved - **MODERATE**
- **Summarising** - writing summaries of texts - **LOW**
- **Highlighting/underlining** - **LOW**
- **Keyword mnemonics** - choosing a word to associate with information - **LOW**
- **Imagery** - forming mental pictures while reading or listening - **LOW**
- **Re-reading** - **LOW**
- **Practice testing** - Self-testing to check knowledge - especially using flash cards - **HIGH**
- **Distributed practice** - spreading out study over time - **HIGH**
- **Interleaved practice** - switching between different kinds of problems – **MODERATE**

Do different techniques work for different individuals? Prof Dunlosky says "no" - the top techniques work for everyone.

But it is likely that students will still rely on what works for them, no matter what the science says!

What works?

Only two of the 10 techniques examined turned out to be really effective - testing yourself and spreading out your revision over time.

Practice Testing

"Students who can test themselves or try to retrieve material from their memory are going to learn that material better in the long run", says Prof Dunlosky.

"Start by reading the text book then make flash cards of the critical concepts and test yourself.

"A century of research has shown that repeated testing works."

This is because the student is more engaged and it is harder for the mind to wander.

He adds: "Testing itself when you get the correct answers appears to produce a more elaborative memory trace connected with your prior knowledge, so you're building on what you know".

Distributed Practice

The best strategy is to plan ahead and not do all your revision on one subject in a block before moving on to the next - a technique called "distributed practice".

Prof Dunlosky says it is the "most powerful" of all the strategies.

"In any other context, students use this technique. If you were doing a dance recital you wouldn't start practising an hour before, yet students like to cram for an exam."

Some students will always start late on their revision. "Students who cram may pass the exam but they don't retain the material.

"When they're going to be taking advanced classes in the subject, they are going to build on the knowledge they're developing, so I highly recommend distributed practice.

"A good dose of cramming that follows up on lots of distributive practice is the best way to go."

What doesn't work so well?

Highlighting

Many students love to take a highlighter to their notes, but the research found that picking out individual phrases in florescent yellow, green or pink can hinder revision.

"When students are using a highlighter they often focus on one concept at a time and are less likely to integrate the information they're reading into a larger whole," he says.

"That could undermine their comprehension of that material."

But he's not suggesting that highlighters should be abandoned as he recognises they are "safety blankets" for many students.

Re-Reading and Summarising

Teachers regularly suggest reading through notes and essays from lessons and making summaries.

But Prof Dunlosky says: "To our surprise it turns out that writing summaries doesn't help at all.

"Students who go back and re-read learn as much as students who write a summary as they are reading."

Mnemonics

Prof Dunlosky says that memory aids, or mnemonics, can work well for remembering specifics, like Richard of York gave battle in vain, which allows people to remember the colours of the rainbow, But he warns they are not applicable to other kinds of material. "They won't help you learn long passages or mathematics or physics."