

The science of revision: nine ways pupils can revise for exams more effectively

Ditch the highlighter and teach a friend. Psychology shows us a lot about how to improve our memory and avoid distractions – here are some dos and don'ts

Highlighting might not be as helpful as you think. It isolates information whereas pupils recall more if they can link what they learn with other pieces of information.

Bradley Busch Psychologist

@Inner_drive

Friday 13 May 2016 15.37 BST

The weeks and months leading up to exams can be challenging for students (and parents and teachers alike). Now more than ever, young people seem to be [feeling the pressure](#). So how can students revise better? Which techniques really work, and which don't? What can students do to improve their memory, mood and concentration?

Before you do any revision

1. Eat breakfast

It is estimated that around 27% of boys and 39% of girls [skip breakfast some or all of the time](#). It's not called the most important meal of the day for nothing: [research has found that skipping this meal significantly reduces students' attention](#) and their ability to recall information. Simply having a bowl of cereal will give students the concentration and memory boost they need.

Evidence suggests students who study in a quiet environment recall more than those who revise while listening to music

2. Put your phone away

This should be an obvious one, but for many it isn't. Phones can be distracting; they are [linked to fomo](#) (fear of missing out), and evidence shows that [undergraduate students who spend more time texting and using social media get lower grades](#). In another fascinating study, [researchers found that the mere sight of a phone was enough to reduce a person's ability to focus](#). The implication couldn't be clearer: out of sight really is out of mind.

During revision sessions

3. Start early and spread it out

Actors don't leave their rehearsals until the day before opening night. Athletes don't only train the day before a match. To commit something to memory takes time. Spreading out your revision sessions on a particular topic (eg one-hour sessions over 10 days) is more effective than spending the same amount of time in one go (ie 10 hours in one day). This effect, known as "spacing", helps because it allows time in between revision sessions to forget and re-learn the material. This strategy has been labelled as ["one of the most robust across the entire history of experimental research on learning and memory"](#) (pdf).

4. Test yourself

Leading researchers in the field of memory consider [testing yourself as one of the most effective ways to improve your ability to recall information](#) (pdf). Testing yourself also helps you check for any gaps in your knowledge. Practice papers provide a good starting point, as well as quizzing yourself at the end of your revision session.

5. Teach someone

After you have tested yourself, teach the material to someone else. This has been found to help aid memory and recall: it is known as ["the Protégé Effect"](#). Teaching someone else requires you to learn and organise your knowledge in a clear and structured manner.

6. Think twice about using highlighters

Despite being the favourite weapon of many students tackling revision, [research suggests they don't work very well](#). People learn and recall information better if they connect it to other pieces of information. Highlighters don't do this, they isolate single pieces of information. Quite often, students end up highlighting whole chunks and passages of text, which can give the appearance of having worked hard, but is of little value.

7. Don't listen to music

Parents around the world rejoice: you now have a legitimate reason to insist that your child stops listening to Justin Bieber on repeat. [Students who study in a quiet environment can recall more than those who revise while listening to music](#). [Extroverts](#), and those with an exceptional ability to [control their attention](#), are not negatively affected as much: but it doesn't help. At best, for these students, it just doesn't hinder them as much as everyone else.

8. Get some fresh air and exercise

You cannot work all day, every day. Nor should you. Revision has to be about quality, as well as quantity. Going outside and getting some fresh air helps people [feel refreshed and better able to focus afterwards](#).

Furthermore, doing a little bit of exercise helps people deal better with [stressful situations: it reduces anxiety and increases self-esteem](#).

9. Sleep

Students are encouraged to work hard and revise a lot before their exams: however, there comes a time when they need to stop and go to sleep.

Knowing when can be tricky. There is a link between being a [perfectionist and struggling to sleep](#). If a child is falling asleep within five minutes of their head hitting the pillow, they should probably be going to bed earlier. Other sleep tips include [having regular bedtimes, not being on your mobile phone in bed](#), but if you are, [turning down the backlight on it](#).

As research into psychology continues to develop, we learn more and more about how best to help students learn. Revision time can be challenging as it often requires students to monitor their own behaviour when working independently at home. Hopefully, by teaching them about what helps improve their memory, mood and concentration, we can better equip them to meet the challenges head on.