

EDUCATION

Better teaching needed

The United States must boost the number of people pursuing degrees and careers in science, technology, engineering and maths (STEM), says a 23 June report from the National Academies. The nation should foster better education in schools, said the report, *Successful K–12 STEM Education: Identifying Effective Approaches in Science, Technology, Engineering, and Mathematics*. The authors also recommend improving STEM literacy to fill STEM-related jobs that do not require advanced degrees, such as science teacher or energy technician. The US Bureau of Labor Statistics says that only 4 of the 16 STEM-related jobs with the largest projected growth by 2018 need an advanced degree.

JOB-HUNTING TOOLS

Inside information

An online forum aims to give job seekers inside information about employers. CareerBliss (www.careerbliss.com/company-questions) in Irvine, California, matches applicants with current employees who can answer queries. The forum has respondents for about 500 companies, universities and organizations in the United States including biopharmaceutical firms such as Pfizer and Genentech, says spokeswoman Alia Henson. Questions can be on any topic, including research funding or grant opportunities.

FAMILIES

Women want flexibility

Female early-career researchers with newborn babies are most likely to want to keep their jobs if their employers provide security and flexibility, including the right to leave work to care for an ill child, a study finds. Published on 23 May in the bi-monthly *Journal of Applied Psychology* (D. S. Carlson *et al.* *J. Appl. Psychol.* doi:10.1037/a0023964; 2011), the study reports better job retention for new mothers who stay physically and mentally healthy as a result of accommodations. Lead author Dawn Carlson, a professor of management at Baylor University in Waco, Texas, says that scientists should check how a prospective employer handles the needs of families before accepting an offer. To retain female staff, universities should allow maximum flexibility. “Whether extending the tenure clock or some other measure, the organization has to figure out a way to support these people if they want to reduce turnover,” says Carlson.

► a photocopy of what is in your head and put it on the page. It is a far more creative and interactive process. As you write, you develop your thoughts. Writing is, in fact, rigorous thinking. So the second way to turbocharge your writing and improve its quality is to get the words down on the page — no matter how bad you think they look or sound at first.

SNACK WRITING

Once researchers get beyond the myths that stop them writing, they often declare that they can't possibly write anything eloquent, insightful or clever unless they have a whole day or week to do it in. And because they don't have that amount of time, they conclude that there is no point in starting. We call this ‘binge writing’. Binge writing isn't inherently wrong; it's just that, for busy people, it can greatly reduce the amount of writing they do. The alternative is ‘snack writing’. This means short — but regular — writing sessions. We suggest about 1–2 hours a day for graduate students who are writing a dissertation, and about 45–90 minutes a day for researchers trying to increase their publication output.

Many researchers tell us that they couldn't possibly get anything useful written in that amount of time. The good news is that studies (which we have replicated many times in practice) show that academics who write for 30 minutes a day produce, on average, more peer-reviewed publications than academics who write for big blocks of time. But the ‘snacks’ have to be regular — 45 minutes once a week doesn't work, but 45 minutes a day 5 days a week does wonders. When possible, try snack writing first thing in the morning. Our experience suggests that this increases the

chances of success by minimizing distractions and ensuring that you have sufficient energy to write clever things. However, for snack writing to lead to really high-quality results, you also need to write in a very specific way.

WHAT IS WRITING?

Before we tell you what writing is, we should tell you what it isn't, at least for the purposes of snack writing.

Writing isn't editing: you should not spend your brief snack-writing time trying to find the perfect word or getting your grammar right. Writing isn't reading journal articles for research: write first and read afterwards, so that your writing shows you what you need to read. Writing isn't referencing: when you make that killer argument and want to reference Smith and Brown (2006; or maybe it was 2007?), don't stop and look it up. Write “Smith & Brown (200??)” and keep going. You can look up the reference later. Furthermore, writing is not formatting, literature searching, photocopying, e-mailing or nosing around on Facebook. Writing — at least for your snack-writing sessions — means putting new words on the page or substantially rewriting existing words.

So, you might ask, when do you do all the editing, reading and other associated tasks? The answer is, any time in the other 23 hours and 15 minutes of the day — just not during your snack-writing time.

So stop waiting to feel ready. Get started with some short and regular writing snacks. What you write won't be perfect at first, but you will be on your way to becoming a prolific academic writer. ■

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TOP TIPS

How to get out of a dissertation-writing rut

- Write before you feel ready — because you might never feel ready. It's amazing how people magically feel ready when there is an imminent deadline.
- Don't wait to have a clear picture of the paper. As you start putting down your ideas, you may actually clarify them.
- Snack write — work in short, frequent bursts instead of waiting to sit down for big blocks of time. Those blocks hardly ever come, and when they do, they don't usually get used very productively.
- Set specific times in your schedule for writing — don't leave it to chance, because

chances are it won't happen.

- Writing means putting new words on the page or substantially rewriting old words. It does not mean editing, reading, referencing or formatting — and it definitely does not mean composing e-mails.
- If you refrain from writing because you worry that what you write won't be good enough, try noting the adage that to write well, you first have to write.
- To really increase the quality and quantity of your writing, get feedback from mentors and colleagues — it can be painful, but it works. **M.G. and H.K.**