

# HOW SEWING BOOSTS OUR BRAINS

Discover the amazing cognitive benefits of our creative hobby  
Written by Michelle Rowley



Illustration: Ksuklein, Getty Images



Photo: Amanda Hutchinson

Natalie Mackenzie is a leading expert on cognition, brain health and brain injury.

As sewists, we all already know that sewing makes us feel good. It's long been recognised that engaging in a creative hobby, such as sewing, brings great benefits to our mental health.

However, did you know that whilst sewing you're not only boosting your mood but also your brain power? Whilst we all know the importance of taking care of our physical and mental health and the steps we should take to do so; our cognitive health is often overlooked. Natalie Mackenzie is a cognitive rehabilitation therapist on a mission to change that. Natalie hopes to raise awareness of the importance of measuring cognitive health in a meaningful way, so that people can add cognitive health to their needs. The good news for us, is that we're already developing the functions of our brain through a hobby we enjoy. "Managing threads, fabrics and images all involve the visual processing network, which is one of the most high-level and complex cognitive processes in terms of the number of neural networks and firings. We often say "cells that fire together, wire together", and sewing is a great repetitive action to ensure those cells are sparking," says Natalie. As I discussed the

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stages of sewing with Natalie, she shared a fascinating insight into what's happening in our brains throughout the process. It's time to discover why having to reach for the unpicker does have its benefits...

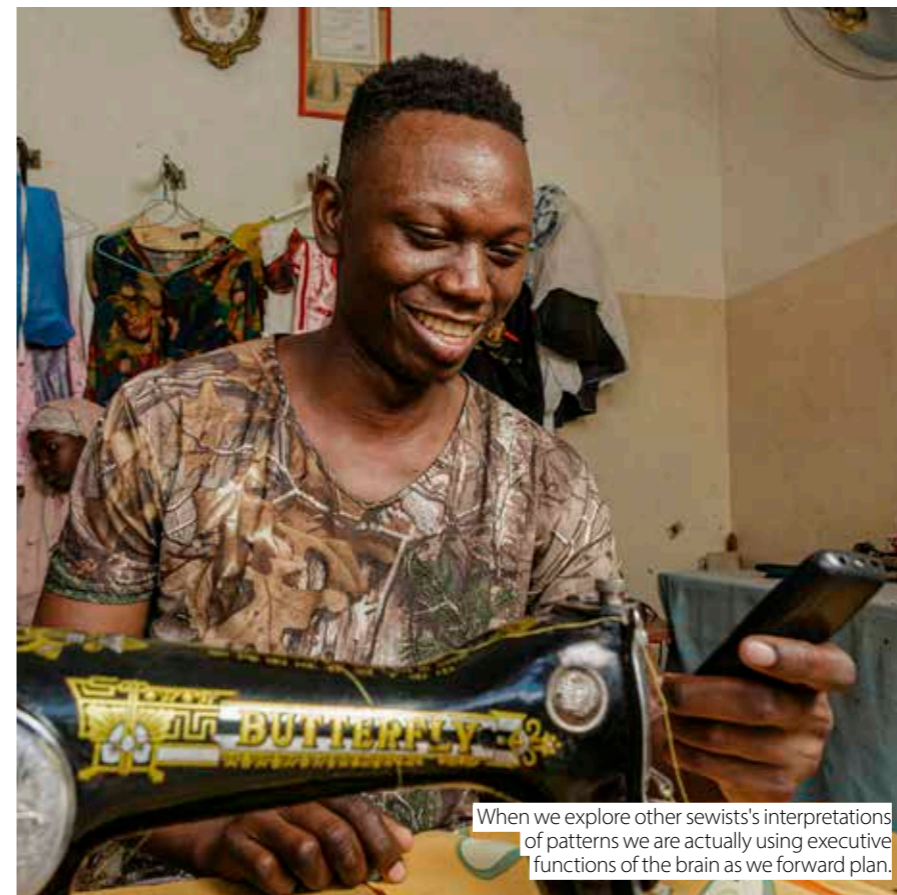
## PROJECT PLANNING

Our journey to the perfect fitting self-made garment starts long before we take our scissors to fabric. Time spent exploring other sewist's interpretations of patterns on Instagram and looking at ready-to-wear garments and applying our knowledge of patterns and pattern mixing to recreate the look is often the beginning of our planning process. We might think we're just enjoying a quick break whilst we check

out the projects in this magazine, but we're actually using executive functions of the brain as we forward plan, make decisions and try to visualise a project's outcome. "You're using the frontal neocortex part of your brain, which is higher-level functioning, as you're trying to predict how a project will go and what the outcome will look like," explains Natalie.

## FABRIC FUN

We know that sewists entering a fabric shop are like kids in a sweet shop; we're filled with excitement, anticipation and overwhelm! We experience a release of the neurotransmitter dopamine as we're doing something which excites us and lifts our mood. "We know that mood-boosting activities help with our ability to make better and clearer decisions but obviously also with excitement comes impulsivity." Through all the excitement we're engaging our brains in a high level of



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executive functioning as we weigh things up, make measured decisions and trying not to be too impulsive. Whether fabric shopping in store, online or just perusing your stash, as you consider a fabric's suitability for your project your brain is working hard to visualise an outcome and retrieve prior knowledge to apply to this project. Furthermore, as you make decisions on suitable notions, such as colour matching zips, buttons and thread or selecting an appropriate width trim, you're using parts of the brain that deal with not just visual processing but also visuo-spatial processing (the ability to effectively process and interpret visual information). So next time you pass a fabric shop you can say you're just popping in to engage in some higher-level executive brain functioning!

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size, so your brain must problem solve to find a solution.

In addition to the problem solving and attention to detail this requires, you're tapping into metacognitive skills (an even higher level of brain functioning) as you analyse the information and make adjustments based on what has happened before. For example, I have learned through my years of sewing that I need to grade the pattern between three different sizes at my bust, waist and hips. From prior experiences I also know I need to make

adjustments to the pattern at the shoulders and neckline to achieve the best fit for my body. I'm activating my working memory to apply this prior knowledge to solve a problem.

**CLEVER CUTTING**

What may seem like playing around with pattern pieces to use them most effectively, whether that's to use as little fabric as possible or to get clever with pattern matching, is actually another exercise in problem solving. You're engaging the pre-frontal cortex of your brain to once again perform visual and visuospatial processing. In addition to this, you're also using mental



Sewing requires the ability to mentally rotate visual representations of objects to reason what objects are and where they belong.



The dopamine release from finally finishing a project is another cognitive-boosting checklist box ticked!

rotation (the ability to mentally rotate visual representations of objects to reason what objects are and where they belong) when you're considering which direction your pattern pieces need to be.

**CAREFUL CONSTRUCTION**

After carefully transferring all the information from your pattern pieces to your fabric (operating your working memory and visuospatial planning functions in the process!), it's finally time to start putting your garment together. As you follow the pattern's instructions, both in written and diagram form, your brain is doing a huge amount of visual scanning whilst we continuously move our attention from the pattern to our project. Whilst sewing you're actively engaged in focused and sustained attention. As you switch from one sewing task to another, you're operating your switching attention ability to move between the tasks seamlessly (pun intended!). What's more, if you're sewing with others, your brain's also using divided attention to multi-task as you hold a conversation whilst you concentrate.

"SEWING IS A HOBBY WITH ENORMOUS SCOPE FOR CONTINUOUS IMPROVEMENT."

"A lot of emotional regulation takes place when you have to fix mistakes" says Natalie. Frustration arises as your limbic system is telling you to quit, but your hippocampus is also working to apply prior learning to help you solve your dilemma.

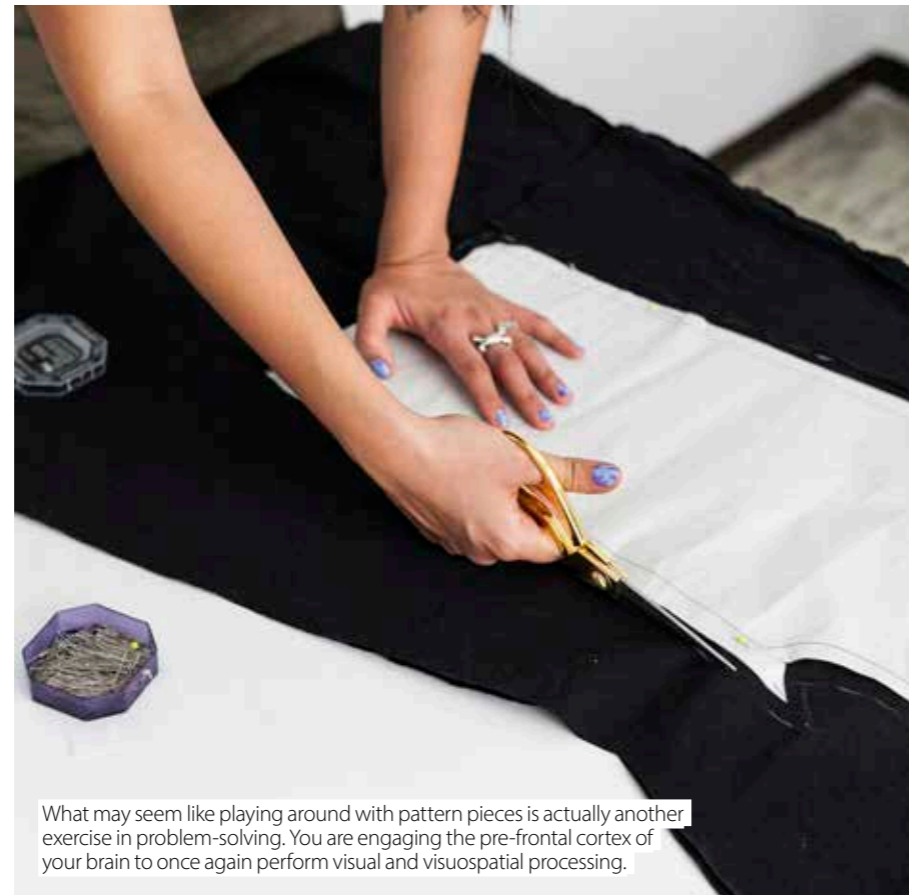
**SO WHAT?**

Why does using all these brain functions whilst sewing matter? "Over time, brain cells can degrade and diminish, so anything that keeps the neural networks active can only be a positive. Learning, practice and consolidation help keep cells active, reducing further decline," explains Natalie. "The more that you repeat things the more you're stimulating those neuronal processes, you're literally firing the synapses to make the connections. The more you do it, the stronger and faster they become."

In addition, sewing is a hobby with enormous scope for continuous improvement as we try new techniques, work with new fabrics and advance to more difficult patterns. "When you learn something new there's a lot more brain activity than when you're doing something repetitive. It takes more cognitive energy, it's more taxing and you're using different parts of the brain. You're creating new neuronal pathways and having more neuronal firings." Natalie adds: "Add in the dopamine release from finally finishing a project and your favourite pastime has ticked a lot of the cognitive-boosting checklist boxes."

**UNPICKING PROBLEMS**

Even with so much careful attention to detail, we all know that mistakes still happen. Whether there's an issue with the fit, you've sewn the wrong pieces together or accidentally cut a hole in your garment, your executive functioning kicks in to tell you how to resolve the issue rather than quit.



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Working out the sizing of patterns requires problem solving, great attention to detail and metacognitive skills.

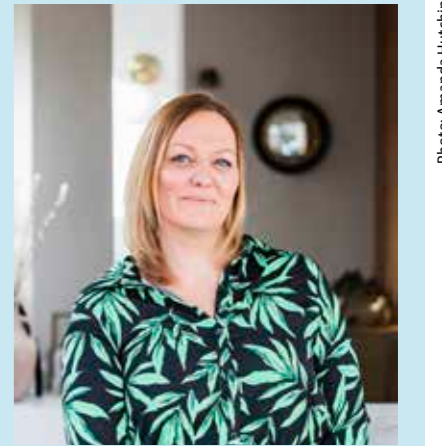


Photo: Amanda Hutchinson

**ABOUT NATALIE**

The Brain Injury Therapist – specialist in cognitive health

Natalie Mackenzie has worked in the field of neurorehabilitation for nearly 20 years. As a Cognitive Rehabilitation Therapist and Certified Brain Injury Trainer, she has worked with hundreds of families and clients as Founder and Director of BIS Services (biss.co.uk) Natalie studied Neuropsychology to Masters level, and is also an ADHD Coach and hypnotherapist. For more information on Natalie's work visit [thebraininjurytherapist.co.uk](http://thebraininjurytherapist.co.uk)



Michelle (she/her) is a writer and dressmaking tutor. See what she's sewing at [@stitchywhitney](https://www.instagram.com/stitchywhitney) and her writing at [michellerowley.journoportfolio.com](http://michellerowley.journoportfolio.com)