

Fidget Spheres: *Mindless interactions as a cure for a wandering mind*



*Design by Jack Eichenlaub
Text by Pieter Desmet*

Yesterday, during my team meeting, couldn't help but notice that I was mindlessly fidgeting with my ring. A little bit of twisting and turning. I do this quite often. Sound familiar?

We all do it sometimes, whether it is clicking a pen, flicking a pencil, playing with a lock of hair, or tapping our fingers. Fidgeting – small repetitive movements we often make without even realizing it, often just for fun.

But here's the question: does fidgeting distract us, or does it help us to stay focused? The research doesn't give a clear answer. While some studies suggest positive effects, more sources point to negative effects on our cognitive performance. This intriguing contradiction inspired designer Jack Eichenlaub, who wondered if fidgeting could be purposeful. And that's where his design, the Fidget Spheres, comes to play – a set of two interactive spherical fidget objects.

The Fidget Spinner – from hero to pariah

You've probably heard about it: five years ago, the Fidget Spinner took the world by storm and became the ultimate trendy toy. It was especially popular among kids. Within a few months, hundreds of millions of spinners were sold, not least due to the marketing claim that they were more than just a fun toy. Fuelled by social media stories, many parents hoped that fidget spinners would help their kids stay focused in school.

However, those hopes quickly evaporated. Experts soon debunked the claims and even suggested that fidget spinners could even have a negative effect on attention span and concentration levels. Not to mention the annoying buzzing sound, fights among jealous classmates, and even some cases of physical injury, leading to a worldwide ban in classrooms (Schechter et al., 2017).

The message was clear: the Fidget Spinner was not a magical solution for restlessness. However, this does not change the fact that there is some evidence indicating that fidgeting with small tactile objects can indeed help us to calm down, increase our attention span and sharpen our focus - as long as it's done properly (Farley et al., 2013).



The Fidget Spinner



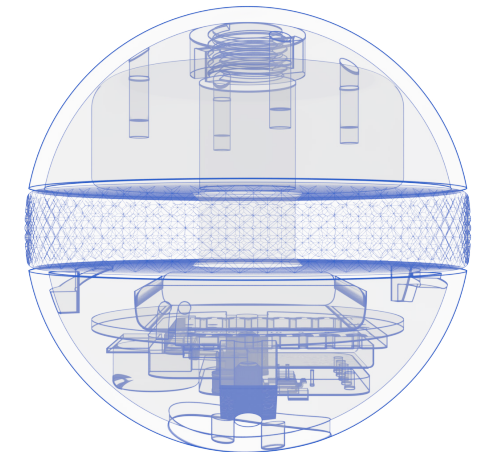
Examples of fidgeting

An Anchor for a Wandering Mind

When your mind drifts away, your thoughts tend to wander away from the task at hand, often in random directions. This happens more frequently than you might realize. According to some researchers, over half of our thoughts are the result of mind wandering. This occurs not only during routine tasks that we perform automatically, like brushing our teeth, but also during tasks that require focused attention, such as studying. Allowing your mind to wander can be beneficial for creativity and exploration. Unfortunately, there is also a downside to unintentional wandering. It reduces our working memory and learning capacity, while increasing the likelihood of misunderstandings and mistakes. One way to prevent unwanted mind wandering is by using an attention anchor. An anchor can take any form – an image, object, sound or even a thought. It is often used in practices like meditation and religious rites (think of prayer beads, a flickering candle flame, or focusing on your breath). Fiddling with an object can also serve an attention anchor, helping you to stay focused on work-related tasks, as long as the fiddling itself is a mindless act.



The Fidget Spheres in hand



The Fidget Spheres: outline of the technology



The Fidget Spheres in action

High-tech Repackaged as Low-tech

Throughout his project, Jack delved into the interplay between attention and inattention (see Eichenlaub, 2022). After considering several initial ideas, he decided to draw inspiration from traditional Chinese meditation balls, known as 'baoding', in the creation of his Fidget Spheres.

These two spherical objects have a diameter of 45 millimetres and are composed half of wood, half of metal. A freely rotating ring sits between the halves. The Spheres are designed to be comfortable to hold and offer various fidgeting possibilities. You can rotate the spheres around each other in your hand, gently sway them back and forth, or twist the ring. Concealed within the spheres is the underlying technology. They are equipped with sensors that detect movement, acceleration, rotation, the speed at which the rings rotate, and your grip strength. By analysing your fidgeting patterns, the spheres can discern whether you are tense or relaxed. In response, the spheres subtly adapt their behaviour.

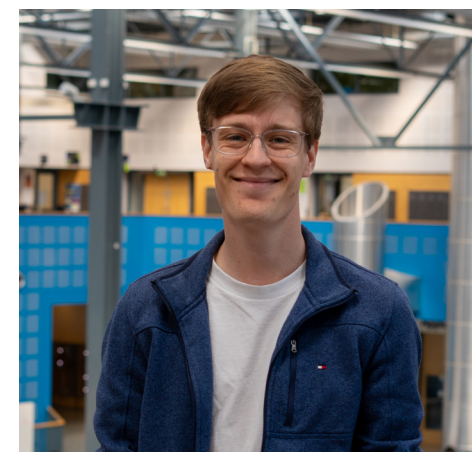
You may feel a gentle vibration and encounter a slightly increased resistance when rotating the ring. This prompts you to re-focus and center your attention. The technology is unobtrusive, while the interactions are tactile and intuitive. You can keep the spheres conveniently on your desk, readily available for use. Additionally, your fidgeting behaviour is timestamped, allowing you to review your data in an accompanying app and gain insights from your behavioural patterns if desired.

Cosmic Duality

Before arriving at his design, Jack conducted extensive research. To his surprise, he discovered that mindless actions can actually support attention levels. This finding seemed to contrast the popular idea of mindfulness, where one consciously focuses on the present moment to enhance awareness. However, it turns out that mindless, non-functional repetitive behaviours can have a similar effect.

Despite their seemingly opposite definitions, inattention (mindlessness) and attentiveness (mindfulness) are closely intertwined. As Jack himself puts it: "Through immersing myself in this project, I came to realize that there are no 'black and white' solu-

tions to design challenges. Reality is much more nuanced, and even concepts that appear contradictory can be more closely related than I ever expected." And so, with his design, Jack not only refers to traditional Chinese meditation balls, but also incorporates the broader concept of cosmic duality found in ancient Chinese philosophy. In the Tao, all aspects of life and the universe are influenced by two opposing principles that exist only in relation to each other. This notion applies to mindlessness and mindfulness as well, representing Yin and Yang—forces equal yet different.



Jack Eichenlaub (photo) developed the Fidget Spheres in 2022 as a self-initiated graduation project for the master's program Integrated Product Design. His supervisors were Haian Xue and Gijs Huisman from TU Delft. Prior to studying in Delft, Jack attended Northwestern University (Manufacturing and Design Engineering). Currently, he continues his research on the Fidget Spheres as a Junior Researcher at the Delft Institute of Positive Design.

Colophon

Fidget Spheres: Mindless interactions as a cure for a wandering

2023

Faculty of Industrial Design Engineering

Delft University of Technology

The Netherlands

Product concept & design by Jack Eichenlaub

Text by Pieter Desmet

Cover image and Image 2 by Shutterstock, Image 1 by Pieter Desmet, and all other images by Jack Eichenlaub.

Graphic design: Willemijn van Hagen.

Copyright © 2023 by Jack Eichenlaub and Pieter Desmet. All rights reserved. No part of this article may be reproduced or utilized in any form without the written permission of the copyright holders.

This article was originally written for the Dutch Journal of Positive Psychology (www.tijdschrift-positiepsychologie.nl).

All articles from the series are available at: www.diopd.org

Reference

Desmet, P.M.A. (2023). Fidget Spheres: Mindless interactions as a cure for a wandering mind. Delft, Delft University of Technology.

DELFT INSTITUTE OF
positive design

