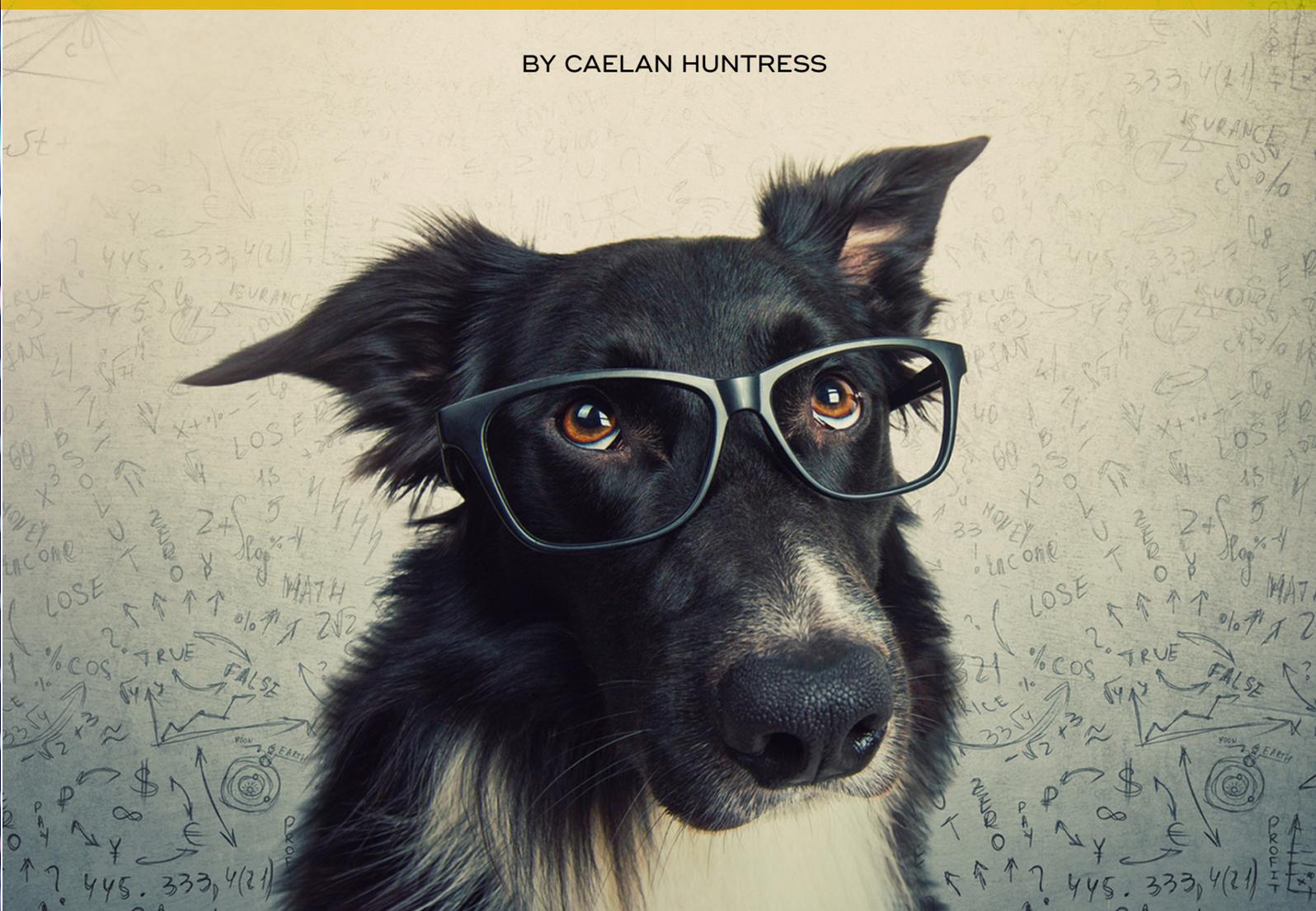


THE NEUROSCIENCE OF INCENTIVES

BY CAELAN HUNTRESS



What's the difference between a test and a game?

- If you can write down an answer to this question within the next 10 seconds, you earn 10 points.
- If all you do is say it out loud, you only get 5 points.
- If you just think of an answer, you get 1 point.
- If you don't think of an answer, you lose a point.

10 seconds. Ready?

'What's the difference between a test and a game?'

10, 9, 8, 7, 6, 5, 4, 3, 2, 1.

How many points did you get?

Do you feel any emotion about your points (or lack of points)?

Was this a test or a game?

Engaging the brain

Every test can be a game and every game can be a test if we incentivise and reward the activity. Our brains are hardwired to pursue incentives and the principles of gamification can make a learning experience exponentially more engaging for a student. Understanding the neuroscience of incentives can help you increase completion rates and learner retention.

Gamification stimulates five hormones that our brains use to regulate emotions, mood and decisions:

- **Oxytocin:** the 'empathy' hormone
- **Cortisol:** the 'stress' hormone
- **Endorphin:** the 'euphoria' hormones
- **Dopamine:** the 'reward' hormone
- **Serotonin:** the 'balance' hormone

Different gamification techniques trigger specific hormones and it is useful to understand their physiological effect to optimise design.

TECHNIQUE #1: CHAPTERS

Create achievable goals to stimulate oxytocin

We feel empathy when we understand someone – or something – else. In storytelling, this is done with chapters, a series of sub-stories that allow us to view the subject through the lens of our own experience.

According to a Stanford University study by Szu-Chi Huang, providing sub-goals – or 'chapters' – early on creates a strong source of motivation. The study concluded that smaller goals provided at the beginning can increase completion rates, by making each smaller task seem more achievable.

Providing an outline at the start that tells the story of the learning experience will define easy wins that new students can quickly achieve and celebrate. Defining a journey from start to finish creates a map for someone to follow and chapters divide an epic journey into a series of short, achievable trips.

TECHNIQUE #2: EXPERIENCE POINTS

Quantify achievement to stimulate cortisol

Attention increases with higher pressure. With higher stakes, there's higher risk and more danger. Our biology evolved to release cortisol as a response to stress, allowing us to handle high-stakes situations with increased attention, alertness and reflexes.

In games, greater difficulty can be rewarded with greater experience points. These validate the challenge that is overcome and provide an easy way to track progress. Award experience points for activities you want your learners to complete and they will work harder to earn more.

PROPER REWARDS JUSTIFY THE STRUGGLE ENDURED AND GIVE SATISFACTION FOR A JOB WELL DONE

TECHNIQUE #3: LEVELLING UP

Unlock new abilities to stimulate endorphins

In martial arts, every level is signified by a coloured belt. At the two ends of the spectrum, the beginner wears a white belt and the expert wears a black belt. Each level in between unlocks greater responsibility, confers greater authority and gives a fuller sense of self.

You can design your learning experience with similar levels of achievement. This enables you to award higher status with each level attained, giving learners a rush of excitement.

TECHNIQUE #4: BADGES

Create positive momentum to stimulate dopamine

Proper rewards justify the struggle endured and give satisfaction for a job well done. In learning, rewards can be provided by awarding badges throughout the experience.

A badge is a symbol of credibility. Learners that feel accomplished and trusted will associate positive emotions with progress. Every badge creates a feedback loop that motivates future progression.

TECHNIQUE #5: LEADERBOARDS

Reward achievements with attention to stimulate serotonin

A leaderboard creates self-sustaining enthusiasm. Earning the top spot on a leaderboard justifies the effort it took to get there.

Ranking people by experience points or badges will dynamically showcase the most active learners, incentivising others to participate. It also gives competitors knowledge of the distance they need to improve and creates friendly competition among the group.



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