**Article**

The Science Behind Gamification: Why It Works

**(**<https://wistia.com/learn/marketing/the-science-behind-gamification>)

It’s no secret that playing games is fun, but that’s not the only reason we keep coming back for more. After all, games are designed with the human brain in mind. Every time you roll the right combination of dice, build a new settlement, or knock out an opponent, your brain’s reward center lights up.

And that’s why gamification is so powerful. By translating elements like points, levels, and progress bars into non-game contexts, you can recreate the gaming experience.

Whether your phone is filled with apps to help you stay fit, learn a new language, or even guide you through a meditation, chances are there’s an element of gamification at play right at your fingertips.

From Super Mario Bros. to Monopoly, the games we play can have a real impact on our brains and the way we learn. But why is that? For a closer look, let’s dive into the science behind gamification and why it’s such a powerful learning tool.

[Your brain on games](https://wistia.com/learn/marketing/the-science-behind-gamification#your-brain-on-games)

Get ready, because we’re about to go full Bill Nye. Games work because of dopamine, a neurotransmitter in your brain that’s activated whenever you achieve something positive. In essence, it’s the drug that makes you feel good. There’s also a specific part of your brain that helps you decide if what you just did was good or bad, and if it’s good, you get a little boost of dopamine.

This reward pathway in your brain plays an integral role in how we actually learn through reinforcement. As the [Nestler Lab](http://neuroscience.mssm.edu/nestler/brainRewardpathways.html" \t "_blank) at the Mount Sinai School of Medicine puts it, “activation of the pathway tells the individual to repeat what it just did to get that reward.”

When it comes down to it, this is a big part of what learning is all about: Do something well > your brain gets a reward > you want to do it again!

“Do something well > your brain gets a reward > you want to do it again!”

Yes, people tend to feel good when they learn. But it can also be challenging to stay motivated all the time. Thankfully, gamification helps give you those little boosts of motivation along the way.

[Games (of thrones) on the brain](https://wistia.com/learn/marketing/the-science-behind-gamification#games-of-thrones-on-the-brain)

[Missandei](http://gameofthrones.wikia.com/wiki/Missandei) is arguably the most impressive character on *Game of Thrones*. Sure, Daenerys can give birth to dragons, but Missandei can speak 19 languages fluently. We know who we’d rather have on our team for trivia night at the local pub.

Learning a second language is on most people’s wish lists, but doing so is difficult. For one, it requires a high degree of motivation, especially when you’re starting off. This is where gamification can help you stay on top of building and maintaining your learning game.

[Duolingo](https://www.duolingo.com/), a language-learning tool built around gamification, has helped more than 200 million people learn a new language by taking gaming concepts and applying them to language courses.

To see what this actually looks like for end users, let’s examine a language that’s equal parts tricky and fictitious — [High Valyrian](http://gameofthrones.wikia.com/wiki/High_Valyrian) from *Game of Thrones*.**[Why levels keep us coming back](https://wistia.com/learn/marketing/the-science-behind-gamification" \l "why-levels-keep-us-coming-back" \t "_blank)**

The Duolingo learning system is divided into 3 sections:

* **Lessons.** At the start of each lesson, users are introduced to some small component of the language. In the example below, High Valyrian learners are first taught the words for different people.
* **Skills.** These act as themes for all of your lessons. First, users start with the basics. Then later, you’ll move on to constructing phrases with those foundational language building blocks. As you continue, the themes become more and more sophisticated.
* **Levels.** Finally, once you’ve mastered each skill, you can advance to different levels within the language. In this case, High Valyrian has only 1 level, but languages like Spanish or Chinese have multiple.

The lessons-skills-levels format performs 2 vital jobs for the gamification of language learning. First, it codifies the process. When you play a game, you rarely beat it in on the first try. Going through the lessons and skills is the language equivalent of Mario running through a level, reaching the castle, and hoisting the flag.

Second, it induces goal-oriented behavior right from the start. You want to complete each lesson and level because it gives you a greater sense of achievement (and hence a bigger rush of dopamine).

[**How progress bars and points keep us going**](https://wistia.com/learn/marketing/the-science-behind-gamification#how-progress-bars-and-points-keep-us-going)

Like most language learning apps, Duolingo lets you learn a little bit at a time, starting with basic sentence constructions.

As you can see, 2 new game concepts are introduced here to keep your motivation going. The first is the progress bar. After each correct answer, the bar fills up so that users have a visual representation of where they currently stand and how much further they have to go.

The second gaming concept is the points system. In the app, you can attain what are called XP, or eXperience Points, for every lesson you complete (10XP, in the example below).

But now what? Just like that insatiable [Veruca Salt](https://www.youtube.com/watch?v=Pqsy7V0wphI" \t "_blank), you can’t help but want *more points, now*. Your gaming brain is telling you to get to the next level, unlock those XP points, and fill up the rest of that progress bar ASAP.

[**Why challenges keep us interested**](https://wistia.com/learn/marketing/the-science-behind-gamification#why-challenges-keep-us-interested)

Even in the best games, monotony has a tendency to kick in. To combat this, game creators often incorporate special challenges that trick players into striving for yet another goal. Check out how Duolingo incorporates a betting-like structure into this challenge to get users to continue learning. You can wager 5 lingots (Duolingo’s form of virtual currency) and end up doubling your bet if you continue to use the app.

Duolingo sets challenges for its users because they know the main factor in learning a language effectively is continued practice. If they can keep you learning, chances are you’re going to keep coming back to the app on a daily basis.

[Going beyond languages](https://wistia.com/learn/marketing/the-science-behind-gamification#going-beyond-languages)

Still, there’s more to gamification than learning a new language or getting to the next level of your favorite video game. Here are 2 examples of businesses taking advantage of gamification tactics to incentivize folks in entirely different ways.

[**Khan Academy**](https://wistia.com/learn/marketing/the-science-behind-gamification#khan-academy)

[Khan Academy](https://www.khanacademy.org/) is an online learning community that lets users learn advanced math, science, humanities, and economics, all for free. When Shantanu Sinha, the president of Khan Academy, first built the community, gaming mechanisms were some of the [first learning tactics he introduced](https://www.huffingtonpost.com/entry/motivating-students-and-t_b_1275441.html):

“Most games give you a sense of immediate success and progress. Instead of waiting for the end of the year to get your grade, imagine if you accumulated a sense of progress with every action you did every single day. Progress shouldn’t be measured by cramming the night before and passing the final; it should be measured by your actions and good work habits every single day, and how well you retain and apply your knowledge.”

For Sinha, it was obvious that games should be incorporated into learning. AP Calculus? Sounds pretty boring. But that’s where gamification comes to the rescue to help take the edge off. At Khan Academy, putting gamification into practice means students can win prizes, badges, and even level up.

Notice how similar this layout is to the levels and challenges Duolingo employs in their app. Both give you a clear idea of your progress, as well as goals to push toward. And because games are user-specific, every path users take is a unique one — you’re on your own personal learning journey.

“Because games are user-specific, every path users take is a unique one — you’re on your own personal learning journey.”

[**Zoho Gamescope**](https://wistia.com/learn/marketing/the-science-behind-gamification#zoho-gamescope)

So far, we’ve only talked about the competitive nature of games in terms of personal competition (competing against yourself to do better). But games foster competition among groups of people, as well.

This element of gaming is especially apparent in the business world. [Zoho Gamescope](https://www.zoho.com/crm/performance/gamification.html" \t "_blank) brings gaming to life for sales teams. It’s no secret that sales environments can sometimes get a little competitive, with reps striving to hit their monthly goals ([*Glengarry Glen Ross*](https://www.youtube.com/watch?v=Q4PE2hSqVnk), anyone?), so incorporating a little bit of healthy competition makes perfect sense.

With Gamescope, sales reps can see who was able to close the most deals or convert the most leads, helping to give clarity to a number of key stakeholders at a company.

* **The reps.** Since compensation is often based on achieving goals, sales reps have a more tangible method of understanding and visualizing their progress toward their quotas.
* **The managers.** As reps become more motivated through the game, managers will likely have to push them less to achieve their goals.
* **The company.** Motivated reps = more deals!

Of course, we’d be remiss not to mention the potential downfalls of gamification. For instance, reps could close *bad* deals just to become the month’s Deal Champ. Or worse, the competitive atmosphere could turn a little ugly ([just ask Jack Lemmon](https://www.youtube.com/watch?v=u9R34QNUy1g)). As with most things in life, moderation is key.

[The end game](https://wistia.com/learn/marketing/the-science-behind-gamification#the-end-game)

Whether you’re designing a new user onboarding system for your website, or just looking to tie in some of the fun of gaming mechanisms into your work process, the science behind gamification has applications for a host of contexts in the marketing and design worlds. And who knows? Before long, you might be having full-blown conversations in High Valyrian with the Mother of Dragons herself.

**Another article**

(<https://blog.wranx.com/the-science-behind-gamification-and-why-it-works>)

The Science Behind Gamification and Why it Works

Gamification is a subject you have probably heard a lot about, but there is little information out there that can guide us to \*why\* it works. Understanding this can help us uncover motivational methods that may already exist within your business.

Worth an estimated $2.3 trillion, the global entertainment and media market is big business. While this comprises of television, radio and film, it also includes video games. Currently, [global revenue of this booming industry is $101.62 billion](http://www.statista.com/topics/868/video-games/), as average consumer spending comes in at just over $90 each year. But it isn’t just the financial side of things that raises eyebrows...

The average gamer is said to spend eight hours a week playing their favoured console or device. Add into the bargain that [67 per cent of US households play video games](http://www.esrb.org/about/video-game-industry-statistics.jsp) and it is clear to see that we have a bit of an obsession. But the enjoyment and pleasure we get from gaming is being used for other purposes aside from entertainment.

Research has found that adopting game thinking and mechanics in non-game contexts can help improve engagement levels, assist in completing certain tasks, improve individual learning and encourage personal development. This is known as gamification.

**A closer look at gamification**

By providing rewards or injecting some fun into every chores and routine tasks, the individual is more likely to get it done in a quick, efficient and successful way. It is a common tactic used by parents, as challenging your kids to clean their room within five minutes will probably have the desired affect.

But now gamification is evident wherever you look, especially on smartphones and tablets. Everything from keeping fit to managing your money can be a fun and fulfilling experience, which also achieves its primary objective. While there is a clear incentive or reward, our natural human instinct of competition and ambition also kicks in. Gamification proposes a challenge, helps you overcome it and provides gratification at the end.

**The science behind gamification**

Gamification is all about motivation, the desire and willingness to do something. This feeling of drive and ambition is fuelled by dopamine, the chemical signal that gets passed from one neuron in your brain to another. Essentially, your body releases dopamine when you experience something pleasurable or satisfying. While these can be all sorts of things, receiving a reward is one of the biggest.

But even before you’ve been recompensed for doing something, your brain may give you a chemical hit. This is because dopamine neurons try to predict the rush you’ll receive from your actions. Over time, they’ll learn when something satisfying is on its way and release good vibes before hand. But this also means that when you receive unexpected gratification, even more dopamine will be released.

Therefore, the more you do (such as competing a task or chore), the more you receive (lashings of dopamine), and the easier it is to stay motivated. Gamification attempts to replicate this model.

**Why gamification works**

At the heart of gamification is motivation, but where does our enthusiasm specifically come from? There are several theories relating to this subject, but [Scientific American believes there are three critical elements that sustain motivation](http://www.scientificamerican.com/article/three-critical-elements-sustain-motivation/).

**Autonomy** - If you’re in charge of your own destiny, you are more motivated to succeed. Being in charge means you’ll work harder and stick to your objectives for a longer periods of time. Experiments indicate that students given the opportunity and authority to select a course on their own persisted longer in problem solving activities.

**Value -**Assigning value to the activity and having an active interest in the subject also increases motivation levels. Research has found a positive correlation between valuing a subject in school and a student’s willingness to investigate a question. If you care, you’ll keep going and work harder until the task is complete.

**Competence** - If an individual develops a proficiency or skill for something, they’re more likely to continue doing it. Again, studies have proven this, showing a strong link between a student’s sense of prowess and his or her desire to pursue certain activities. What’s more, those who credit innate talents rather than hard work tend to give up more easily.

Gamification takes advantage of our extrinsic (factors like money or grades) and intrinsic (personal gain or enjoyment) motivation to enhance daily activities or specific tasks. Therefore, gamification works best if both of these motivational factors are catered for. Even though you want to feel good about yourself, some form of reward or prize is also required.

**Wranx gamification**

Wranx has taken the science and theory behind gamification and applied it to comprehensive training solutions. We know that a sense of accomplishment coupled with receiving rewards and the thrill of competing against others can enhance any organisation’s training programs.

With our gamification model, over 300 different achievements can be won by demonstrating knowledge about subjects relating to your business, industry or job requirements. After taking part in these games, employees can see what position they’ve achieved on a leader board comprising of fellow colleagues’ performances. This promotes competition and encourages your workforce to try harder.

Another way Wranx tries to support employees is by letting them know what behaviours are required to win more prestigious awards. This might sound a bit frivolous, but as gamification has previously proven, receiving rewards or honours is of great benefit to those wanting to develop and do better. As an employer, you can also set time limits on certain awards to encourage greater focus on the topic in question and help your staff complete a training program promptly.

Coupled with our accelerated learning system, deep-dive reporting, cloud hosted solution and multi-device support, gamification enables staff to learn new skills and expertise in an enjoyable, effective and flexible way.

**Another article**

(<https://library.canvas8.com/content/2019/04/05/science-of-gamification.html>)

LEVEL UP! THE SCIENCE OF GAMIFICATION

The gamification market is flourishing as brands seek to engage potential customers in novel ways. But what do people get out of these ads and campaigns? Canvas8 spoke to Nannan Xi, a researcher at Gamification Group, to learn how different game elements affect consumer-brand relationships.

[Highlights & Data](https://library.canvas8.com/content/2019/04/05/science-of-gamification.html)

* Gamification can increase people’s intrinsic motivation for engaging with a brand by satisfying feelings of autonomy and competitiveness
* Different gamification features (e.g. avatars, leaderboards, role-playing) encourage different forms of engagement – cognitive, emotional, or social
* Any kind of engagement through gamification can help build positive associations with a brand, boosting an individual’s perceptions or loyalty
* While immersive gaming features can help people escape and enhance their wellbeing, achievement-based elements can support behavioural change
* Among workers who have regular experience of gamification, **85%** would spend more time on software that was gamified *([TalentLMS, 2018](https://www.talentlms.com/blog/gamification-survey-results/" \t "_blank))*
* **55%** of gamers aged **18-30** say they play because it helps them unwind and **27%** say gaming has helped them cope with a mental health issue([Dave, 2018](https://www.independent.co.uk/life-style/video-games-stress-playing-strategy-key-gamers-study-a8202541.html))

**Scope**

From [McDonald’s annual Monopoly](https://monopoly.mcdonalds.co.uk/how-to-play) campaign to [Guerlain’s Tetris](https://www.luxion.com.au/case-studies/guerlains-addictive-tetris-lottery-game/) mini-app on WeChat – which allowed users to play the classic puzzle game for a chance to win beauty products – brands across industries are tapping the power of gamification to engage potential customers in novel ways. In fact, the global gamification market was valued at [$6.8 billion](https://www.gamasutra.com/view/pressreleases/339982/Global_gamification_market_was_valued_at__68_billion_in_2018_and_is_projected_to_grow_at_an_impressive_CAGR_of_32_to_reach__40_billion_by_2024.php) in 2018 and is expected to reach $40 billion by 2024. But how exactly do gaming elements impact people’s perceptions of and relationship with a brand?

“In the marketing realm, gamification has been used by many enterprises to improve advertising performance, engage customers, and enhance perceived brand value,” explains Dr. Nannan Xi, a post-doctoral researcher at [Gamification Group](https://www.tut.fi/Gamification/) and co-author of '[The Relationship Between Gamification, Brand Engagement and Brand Equity](https://www.researchgate.net/publication/331100911_The_Relationship_Between_Gamification_Brand_Engagement_and_Brand_Equity)'. Canvas8 spoke to her to better understand how people’s interactions with different gamification features impact their psychological connection to a brand.

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**Why is this topic important to understand?**

Gamification refers to design that attempts to bring about similar positive experiences as games do, consequently affecting user behaviour and cognitive processes. Many international companies adopt gamification techniques to increase consumers’ brand awareness, brand attitude, and brand loyalty, such as [Where’s Waldo on Google Map](https://www.forbes.com/sites/kevinmurnane/2018/03/31/wheres-waldo-hes-hiding-in-google-maps/#4b9951b01ac8), [Ant Forest](https://library.canvas8.com/content/2019/04/05/science-of-gamification.html?error=loginRequired) from Alipay, and the [Samsung Nation](https://www.samsung.com/us/welcome_BV.html) online community.

When I ask my friends who are big players the reason why they play games, many tell me it gives them a very special feeling that they can’t get in real life. For this study, I wanted to understand why games have this power to attract people and how we could use the logic harnessed in game design to engage users in non-game content. How can we give people a similar feeling to the one they get when they play games?

In 2019 we published another paper that investigated how gamification can drive or increase users’ intrinsic motivation and found that it can satisfy the three basic needs of users: autonomy, competence, and relatedness. Users feel like they have power, skill, and relatedness, and these three basic needs are the reason why people play. The objective of this paper was to go deeper and investigate the relationship between the interaction with different gamification features and the intrinsic need for satisfaction.

Gamification can help brands go beyond a transactional relationship

McDonald’s UK (2019) ©

**How did you go about conducting your study?**

In this paper, we studied the role of gamification in brand management by investigating the relationships between different categories of gamification features, brand engagement, and brand equity. Immersion-related features attempt to immerse the player in self-directed inquisitive activity and include game mechanics such as avatars, storytelling, and role-playing. Achievement-related features attempt to increase the player’s sense of accomplishment and include badges, challenges, leaderboards, and progression metrics. Social-related features enable social interactions between players and include mechanics such as cooperation and praise.

We wanted to find out how these three gamification features influence brand management, which we measured through brand engagement and brand equity. Brand engagement refers to the psychological connection with the brand which includes three dimensions. These were emotional (the customer’s affection towards the brand), cognitive (the interest they have to interact with the brand), and social (the enhancement of the interaction based on the inclusion of others).

When I ask my friends who are big players the reason why they play games, many tell me it gives them a very special feeling that they can’t get in real life

Dr.Nannan Xi

We had four hypotheses. The first three involved a positive association between the three gamification features and the three dimensions of brand engagement. We predicted that the immersion-related features would be positively and more strongly associated with emotional brand engagement, as would achievement-related features and cognitive brand engagement, and social-related features and social brand engagement. Our fourth hypothesis was that brand engagement is positively associated with brand equity.

To test these, we conducted an online survey for three months with the brand communities of technology companies Xiaomi and Huawei, which had up to 13 gamification features including avatars, personalisation features, badges, virtual currency, and leaderboards. We then asked participants how often they interacted with those features and the importance of those interactions, all the while measuring emotional engagement, cognitive engagement, and brand equity.

Different game features provide different kinds of engagement

Ars Electronica (2019) ©**What were your key findings?**

We found that the interaction with immersion-related features was only positively associated with social brand engagement. This may be because some of the features such as avatars, virtual identity, profile, and personalisation have more of a social function as they allow users to display information about themselves to others, which can facilitate an exchange of information.

The interaction with achievement-related features was positively associated with all three dimensions of brand engagement but more strongly associated with cognitive engagement as it encourages people to use their cognitive abilities to achieve the mission. Similarly, interaction with social-related features was positively associated with all dimensions of brand engagement but stronger with social brand engagement as it motivates people to connect with others. This means that these two types of gamification provide a wider spectrum of brand engagement, which means using them on community websites would be an effective approach.

Lastly, the three dimensions of brand engagement had significant positive associations with brand equity. Overall, the results imply that there is a positive chain of associations between gamification, brand engagement, and brand equity, and that gamification appears to be an effective tool for brand management.

People play to feel a sense of achievement, connection, and escapism

Faculty of Information Technology and Electrical Engineering NTNU (2017) ©**Insights and opportunities**

* This research shows that exposing people to a blend of emotional, cognitive, and social gamification features can work to increase brand loyalty and engagement. One brand already incorporating these is [Snatch](https://library.canvas8.com/content/2019/04/05/science-of-gamification.html?error=loginRequired), an AR treasure hunt that sees players move around the real world searching for virtual parcels, for which they receive points and prizes. The mechanics of the game, which include snatching and protecting their parcels, encourage emotional responses from players.
* There are opportunities to use gamification in the workplace to engage employees and foster stronger relationships with employers. One survey of workers who regularly experienced gamification found that [85% would spend](https://www.talentlms.com/blog/gamification-survey-results/) more time on software that was gamified and 81% would be more likely to invite a colleague to use gamified software.
* [Research shows](https://library.canvas8.com/content/2019/04/05/science-of-gamification.html?error=loginRequired) that people play games to escape into virtual worlds as a means of coping with life stressors. Indeed, [55% of 18- to 30-year-old](https://www.independent.co.uk/life-style/video-games-stress-playing-strategy-key-gamers-study-a8202541.html) gamers say they play because it helps them unwind, while 27% say that playing has helped them cope with a mental health issue. It means that brands could benefit by focusing on immersion and escapism, enhancing both the individual's wellbeing and their relationship with the brand.
* Gamified points-based systems can be effective as they increase people’s intrinsic motivation to use a service. It’s why [Uber](https://library.canvas8.com/content/2019/04/05/science-of-gamification.html?error=loginRequired) launched Uber Rewards, a frequent flyer-style initiative organised into four levels and designed to boost loyalty by rewarding riders with points for every dollar spent. Achievement-related features can also be used to [support behavioural change](https://www.sciencedirect.com/science/article/abs/pii/S1441358216301513). [Ahwaa](https://library.canvas8.com/content/2019/04/05/science-of-gamification.html?error=loginRequired" \t "_blank), a Bahrainian-based LGBTQ forum, uses a system that only lets users ‘unlock’ new levels of access once they’ve made frequent supportive posts and interactions relating to the LGBTQ community in the Middle East. Meanwhile, [the Ant Forest app](https://library.canvas8.com/content/2019/04/05/science-of-gamification.html?error=loginRequired) incentivises Chinese citizens to engage in real-life low-carbon activities, letting them collect energy points and compete with friends to grow a virtual tree. Once they’ve accumulated enough points, Ant Financial plants a real tree as a reward.
* Video games get a bad rep for stopping people from socialising, but they can host social spaces in their digital worlds. For example, a [2006 study](https://www.psychologytoday.com/gb/blog/video-game-health/201901/video-games-are-social-spaces) looked at over 5,800 messages sent by users while playing an online multiplayer game and examined whether they were socioemotional (e.g. ‘Thanks for the help’ or ‘Wow, that was funny’) or task-oriented (‘How do you open this door’ or ‘What do I need to do?’). It found that there were 3.2 times as many socioemotional messages as task-oriented ones, and they were 2.6 times more likely to be positive than negative. With immersion-related features such as avatars, storytelling, and role-playing shown to improve social engagement, brands interested in gamification may emphasise these elements to building strong intra-community connections.