

# Gaming away the leadership gap

**Linking gamification and behavioral  
science to transform leadership  
development**



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Deloitte's Digital Center for Immersive Learning (DCIL) provides cross-sector thought leadership and expertise in the design and development of high-engagement learning applications. These include game-based learning, training simulators, augmented reality, and virtual reality experiences.

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# Introduction

**W**HAT do Candy Crush, the game of chess, and airline pilots have to do with leadership development?

According to behavioral research, there is more of a connection than you might think. Part of what makes conquering cartoon villains or treasuring imaginary coins so captivating are the basic mechanics common to all games. These game mechanics can dramatically increase intrinsic motivation. These same drivers are present in the methods chess masters use to build their expertise and in the way pilots learn from simulations. And they can provide insightful learning and development opportunities for leaders.

We know that leadership development continues to remain top of mind for many organizational leaders.<sup>1</sup> Studies suggest that leadership development is best acquired through experience and reflection, yet many traditional leadership training programs are unable to deliver this type of learning opportunity.<sup>2</sup> While classroom environments can be an effective learning channel, they are hard to replicate, customize, and scale. In addition, it can be a challenge to gather data-driven

insights in classroom settings, so many learning and development professionals turn to digital technologies. But employees are often disappointed with their company's e-learning platforms; they lack the robustness used in technology outside of work.<sup>3</sup> The challenge is to provide an environment that offers leaders a chance to gain experience and an opportunity for reflection, while also meeting their technology expectations.

Advancements in psychology and gaming may help address these challenges. This paper will examine how experience can be gained through gaming and the psychological benefits derived from engaging in games such as Candy Crush. We will explore the ways adults learn and build leadership capabilities by understanding how chess players master their art. And we will discover the advantages of learning in a hazard-free environment, as pilots do, while providing examples of organizations using gaming mechanics to develop leadership capabilities. Finally, we will provide recommendations for incorporating gaming and simulation technology into your existing leadership development programs.

# The unexpected costs of poor leadership

**A**S complexity and disruption continue to grow, it is becoming harder to define one “right way” to lead today’s organizations. There is no “one-size-fits-all” approach, and what worked yesterday could fail tomorrow.<sup>4</sup> Leadership encompasses more than a role or box to fill on an organizational chart; it is a tool to develop throughout every department of every organization. Deloitte defines leadership as a function of *who* you are, *what* you can do, and *how* you do it. The leadership attributes and capabilities needed are scarce and require significant time and investment to develop. Developing them, however, is often much easier said than done.

This could be why “leadership” was the biggest gap identified in Deloitte’s 2015 *Human Capital Trends* report,<sup>5</sup> where 9 out of 10 global HR and business leaders cited it as a top organizational challenge. Developing Millennial leaders was found to be particularly vexing: A whopping 66 percent of participants surveyed said they do not feel prepared to develop the next generation of leaders, with 51 percent believing they do not have the bench strength needed to meet future business demands.<sup>6</sup> This lack of leadership readiness can result in two significant costs to organizations:

- **Financial performance.** A lack of effective leadership can have a tremendous impact on a firm’s bottom line. One study

examined the link between financial performance and leadership skills,<sup>7</sup> investigating a sample of stock prices of publicly traded financial services firms. It found that companies that made larger investments in employee development achieved stock market returns that were five times higher than

those that made much smaller investments.

Deloitte’s own research has found a similar correlation: Nearly 500 investment analysts told us they value firms at a 15 percent premium for effective leadership or a 20 percent market discount for perceived mismanagement.<sup>8</sup> In the venture capital industry,

a study of 200 venture capitalists found that leadership strength was the most important criterion in evaluating an opportunity.<sup>9</sup>

These studies show that the perceived strength of a firm’s leadership can have tremendous financial implications.

- **Employee experiences.** Meanwhile, the hidden costs of poor leadership can actually prove to be more detrimental in some cases. In a study examining 122 employees at a large financial firm, it was found that trust in leadership and perception of a leader’s ability greatly influenced the employees’ own levels of engagement. It revealed that almost 50 percent of employee engagement scores were tied to employees’ relationships with their managers.<sup>10</sup>

Deloitte defines leadership as a function of *who* you are, *what* you can do, and *how* you do it.

Poor leadership can also foster what psychologists call reactance—a motivation to exhibit counterproductive behaviors when an employee feels mismanaged. Here’s how Researcher Ron Friedman describes it:

“Within the workplace, micromanagement can trigger reactance in ways that are not immediately visible to a supervisor. Customers might be made to wait a little longer. An employee’s cell phone suddenly ‘dies’ just when his manager needs to reach him. And, of course, the ultimate act of defiance: employee turnover.”<sup>11</sup>

So, in obvious and hidden ways, poor leadership can adversely affect the bottom line and foster employee disengagement, counterproductive work behaviors and, ultimately, turnover. The need to develop effective leaders is clear. However, many of today’s leadership development programs fall short on tailoring

curriculum to meet today’s learners. Research suggests that today’s learners are distracted—it is estimated that only 1 percent of the work week is spent on formal learning activities.<sup>12</sup> This creates a great challenge in capturing a learner’s attention. Yet, many traditional leadership development programs continue to turn to lectures or e-learning videos, which rarely conform to the way adults learn.<sup>13</sup> And if learning and development professionals are able to get leaders to show up for training, more often than not, they are physically present but mentally absent—focused more on what is being missed in their jobs by attending the training. Research continues to suggest that adults learn best via experiences, where the experience provides the foundation for learning and reflection activities. As Aristotle said, “For the things we have to learn before we can do them, we learn by doing them.”<sup>14</sup> However, providing this type of hands-on leadership training in an engaging and effective way can be challenging.

# A serious game for a serious problem

**N**OW, an innovative, fresh approach is emerging that offers hope. Recent advances in immersive learning technologies or “serious gaming,” such as game-based and simulation-based environments, can help enhance leadership development and mitigate the costs of poor leadership. (See sidebar “What is immersive learning?”).

While many may be skeptical about using gaming to develop a crucial skill set such as leadership, early adopters are already seeing results. The US Army has employed serious gaming to address challenges in training and development. While soldiers were well-trained in weapons and war tactics, they needed to increase their familiarity with other cultures’ values, norms, and environments

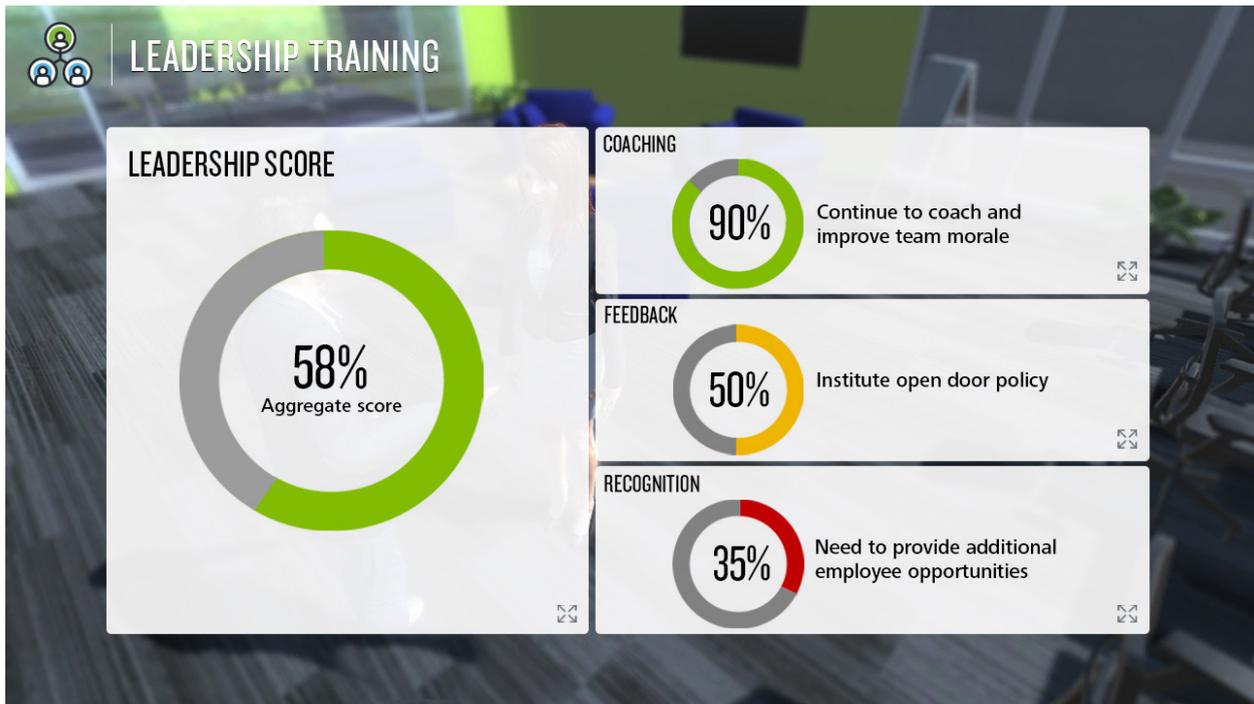
when deployed. First Person Cultural Trainer, a gaming simulation, was developed, which “challenges the Army’s junior leaders to understand the consequences, good and bad, of their speech, body language, posture, temperaments, and action.”<sup>15</sup> Learners progress as an avatar—a graphical representation of their character—in a 3D environment using a first-person point of view to interact and work with various members of a foreign community. The goal is to learn the social structures, issues, and consequences of working within the community and then provide feedback on how the player’s behavior and perception of other’s emotions impacted their ability to build rapport. The learner progresses through four levels of

Figure 1. A values-based leadership game



Source: Digital Center for Immersive Learning, Deloitte Consulting LLP.

Figure 2. Dashboards that allow learners to see how their leadership style influences culture



Source: Digital Center for Immersive Learning, Deloitte Consulting LLP.

## WHAT IS IMMERSIVE LEARNING?

Gartner research defines immersive learning environments (ILE) as “learning situations that are constructed using a variety of techniques and software tools, including game-based learning, simulation-based learning and virtual 3-D world. ILEs are distinguished from other learning methods by their ability to simulate realistic scenarios and environments that give learners the opportunity to practice skills and interact with other learners.” This article specifically explores serious gaming, which is developed with specific learning outcomes in mind that leads to measurable and sustained changes in behavior and performance.<sup>16</sup>

gaming while building communication, intelligence gathering, and interpersonal skills.

One early adopter in the corporate arena is using serious gaming to enhance corporate culture and values by gaining a better understanding of different types of leadership styles. The customized game this organization developed includes different scenarios a leader will likely encounter, such as handling difficult employee conversations, taking responsibility

when work isn’t achieved as desired, or managing an employee’s career path (see figure 1). As learners progress, they are able to receive immediate feedback and data points on the type of leadership style they most often portray as well as how their leadership impacts the work climate (see figure 2). The game offers learners the opportunity to connect the dots between their actions and how they influence others within a safe learning environment.

Gaming can also help develop cognitive ability. A research study found that adults processed information faster and improved their reasoning and problem-solving skills after playing video games that included progressively more difficult challenges. The study also found that video game players perform 10 percent to 20 percent higher in cognitive ability than those who either do not game or don’t play games with increasing difficulty.<sup>17</sup> Another study found that training participants who learned through game-based simulation were 20 percent more efficacious post-training than those who didn’t experience the game-based training.<sup>18</sup>

## Psychological forces at play

Let's take a moment to consider how powerful and addictive gaming is. When you have free time, what is the first thing you typically do? Check in on a game of Angry Birds, Candy Crush, Bejeweled, or Words with Friends? You're not alone. These gaming apps are an absolute global phenomenon.<sup>19</sup> And not just with teenagers; business managers and executives are also seduced by these games, often with an attached personal cost—bedtimes are disregarded, meals missed, and even weekends can seem to disappear.<sup>20</sup>

Here are the reasons why gaming is so captivating (figure 3):

- **We receive instant feedback.** Gaming creates a world that allows us instant results based on our performance. Author Ron Friedman explains, “When we pick up our smartphones and settle in with a good game, we immerse ourselves in a world that offers instant feedback on our performance and a sense of accomplishment when we succeed. A world where every task offers an opportunity to grow our competence, enhance our skills, and earn recognition.”<sup>21</sup> We know almost immediately how well we did on a particular task, fueling our need for feedback and recognition.
- **We experience a sense of flow.** Time passes quickly when gaming. How many times have you been so immersed in completing a task within a game that you lose track of time? Psychologists refer to this as flow, a state in which we are completely absorbed in an activity and unaware of all other stimuli. Your ability to concentrate on the task at hand becomes effortless.<sup>22</sup>
- **Progressive difficulty makes us want more.** All games have levels that inspire you to continue to work toward the goal.

Figure 3. What makes gaming so appealing?

Psychological appeal of gaming	Outcomes
<b>We receive instant feedback</b>	Fuels our need for feedback and recognition
<b>We experience a sense of flow</b>	Ability to concentrate becomes effortless
<b>Progressive difficulty</b>	Our need to achieve kicks into overdrive

Graphic: Deloitte University Press | DUPress.com

Gaming is less about the given task, because, let's face it, flinging birds across a screen is not all that engaging. But gaming creates a progressively more difficult environment in which our need to achieve kicks into overdrive. We're continuously pushed toward higher levels of performance that reinforce that state of flow. Research suggests that we are most engaged when our skills are stretched and when we are building expertise.<sup>23</sup> Gaming does that.

- **Gaming is intrinsically gratifying.** Advancements in neuroscience reveal that when we learn and acquire new information, our production of dopamine rises.<sup>24</sup> This explains why gaming is so enthralling. The release of dopamine actually makes everything more interesting. Our moods usually improve, too.

These attributes—receiving feedback instantly, experiencing flow, progressive difficulty, and intrinsic gratification—are powerful mechanisms to promote adult learning. This intersection of psychology and gaming helps us understand the allure of using gamification to complete repetitive tasks. However, this alone is not enough to build complex expertise. Recent advancements in behavioral science can help us understand how leadership capabilities can be developed using gaming.

# Building leadership capabilities: What it takes

Becoming an effective leader is no simple feat. Effective leaders rely on many different capabilities, such as influence, performance management, and an understanding of how to cultivate talent. Developing these capabilities requires leaders to start looking for critical cues in their environment, identifying the most effective ways to manage the challenges they face, and deciding on a course of action. This is referred to as *schema-based development*, which focuses on getting leaders to think before doing. It encourages problem solving by reflecting on what expert leaders do right and incorporating

Practice can only be effective when you are practicing the right things.

their best practices. Practice can only be effective when you are practicing the right things.

The development of *schemas*—our mental representations of what makes effective leaders—can be intricate and slow, and can be compared to learning the game of chess. In his study of chess masters, Nobel Prize-winning social scientist Herbert Simon demonstrated how, after thousands of hours of practice, chess players begin to actually *see the board differently*. Rather than engaging in the part of the brain that depletes one's energy, System 2, a chess master is able to play much of a match in the automatic processing center of the

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## UNDERSTANDING THE WAY WE THINK

(adapted from *Think slower: How behavioral science can improve decision making in the workplace*)

Behavioral economist Daniel Kahneman's groundbreaking work in *Thinking, Fast and Slow* describes the way we think and make decisions. System 1 represents those fast, automatic thoughts we continually process, often without our awareness. "The capabilities of System 1 include innate skills that we share with other animals. We are born prepared to perceive the world around us, recognize objects, orient attention, avoid losses, and fear spiders," Kahneman writes. With System 2, we engage in much more complex thinking than in System 1: We concentrate more deliberately on the potential outcomes, and generally come to more rational conclusions. Examples of System 2 at work include parallel parking, solving complex math problems, and trying to untangle the plot of the television show, *Lost*.

The problem with System 1, Kahneman explains, is that it "makes us see the world as more tidy, simple, predictable, and coherent than it really is." As a result, we rely heavily on error-prone mental shortcuts, or heuristics, to make leadership decisions. (For a more thorough discussion on heuristics, see *Behavioral strategy to combat choice overload*.) This tendency to rely on heuristics is then amplified by the growing complexity in which leaders must now operate. The power of experience is that it often sheds light on the errors of System 1 thinking.

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brain, referred to as System 1. (See the sidebar “Understanding the way we think.”)

When playing, the chess master is able to react quickly and correctly because he or she has developed an ability to recognize patterns and learn which choices will lead to the best outcome. The game becomes less laborious and more intuitive. “The situation has provided a cue; this cue has given the expert access to information stored in memory, and the information provides the answer. Intuition is nothing more and nothing less than recognition,” Simon explains. Here, System 1 is engaged to quickly, effortlessly, and accurately retrieve stored experiences to make complex judgments. It becomes an “I’ve seen something like this before” mind-set.

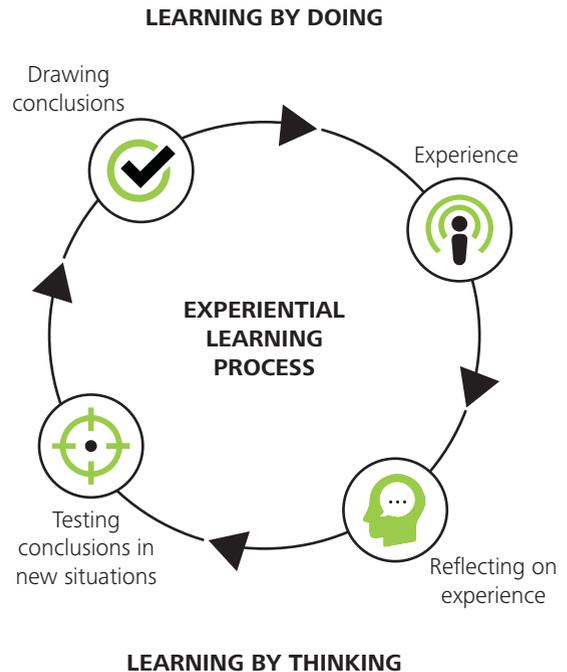
This is why the majority (80 percent) of leadership development comes from experience. Our schemas derive from experiences. However, experience alone is not enough to learn and develop leadership capabilities. John Dewey, the “father of pragmatism,” stated, “We do not learn from experience . . . we learn from *reflecting* on experience.” Leaders need to go through a variety of situations, which are then stored and retrieved from memory as needed. Each time they work through a challenging decision, they have an opportunity to practice asking the right questions and puzzling through possible alternatives (see figure 4). Over time, this process becomes more efficient and they begin to quickly recognize solutions they would have missed before.

The problem with practicing leadership in a real-time business environment, however, is that when problems arise, it typically has deleterious effects on employees and/or the company’s finances. Here, organizations can take cues from the use of simulated flying experiences for pilots.

## Creating a hazard-free learning environment

Many leaders often find themselves leading without the necessary experience or skill set required to navigate the greater responsibility

Figure 4. Experiential learning process



Source: Adapted from Kolb’s experimental learning cycle.<sup>25</sup>

Graphic: Deloitte University Press | DUPress.com

and complexity associated with leadership roles. Research suggests that employees are entering leadership positions earlier in their careers than in the past.<sup>26</sup> What often results is a lot of trial and error with mishaps and derailment due to a lack of experience.<sup>27</sup> It is estimated that leadership derailments can cost a considerable amount to a firm: One study found that the failure of US executives costs the economy \$13.8 billion dollars per year.<sup>28</sup> Consider the following scenario.

*An employee at a midsize financial services firm who possessed great technical expertise was quickly promoted to lead a small team. After a couple of months leading the team, the team’s satisfaction and engagement scores began to tumble. The newly promoted manager was called into the HR office one day after mishandling an employee relations situation; now the employee was threatening to sue the organization. The solution was to send this new manager to an all-day, in-person training session to develop interpersonal skills. The lead HR*

*professional was surprised when the manager came back even more frustrated than before. “They make it all sound so easy. The problem is every person and situation is different, so the cookie-cutter solutions don’t always work.”*

What if a different approach was taken to address this new leader’s challenges? What if the leader could try out his leadership style in a variety of settings to determine potential outcomes without actually hindering employees’ experiences?

In the airline industry, pilots would never dream of flying an actual aircraft before completing hours of simulated training. And pilots are required by law and industry guidelines to complete simulated training throughout the year, allowing them to continually practice in a safe environment. In most workplaces, however, simulations have yet to gain favor. Every day, leaders are managing others without practice, which is costly from an organizational culture and financial viewpoint. Randall Hill, research professor of computer science at USC, predicted:

“I believe simulation technologies are going to change the way we educate and train the workforce, particularly in the area of social skills. In time, just as a pilot shouldn’t fly without practicing in a simulator first, managers and leaders will routinely practice with virtual humans for the challenging situation they’re sure to encounter.”<sup>29</sup>

Simulations provide a hazard-free environment that allows pilots to practice and develop their skill sets. It may be time to take that same approach with leadership. While leaders often have difficulty finding the time to engage in the practice necessary to further develop their leadership capabilities, serious gaming enables learning and development professionals to create content that is both engaging as well as flexible, empowering the learner to practice at his or her own pace and time. Let’s explore the benefits of combining the psychological allure of gamification and using simulation technologies to create safer and more effective learning experiences.

# Developing a serious game around leadership

We've established that serious games deserve serious consideration. However, it is important to consider the design criteria of the game given the specific challenges of leadership development. A well-designed game balances frustration, practice, achievement, and increasing levels of difficulty while reinforcing the principles needed to reach the desired learning objectives of the intervention. Here are four things to consider when using serious games to develop leaders:

## Customize the character

Leaders all have personality differences and thrive under different conditions. In the interest of efficiencies and scale, though, organizations tend to adopt a one-size-fits-all approach to leadership development. Well-intended development programs prescribe tools and techniques on how to be the “right” leader for the organization.<sup>30</sup> Unfortunately, these approaches adopt a regurgitated form of knowledge, rather than focusing on participatory learning that carries over to different applications and contexts. Gamification allows learners to discover their own unique strengths and weaknesses by customizing the game to their liking.

## Set a goal that orients the character toward self-discovery

While entering positions of power and status, many new leaders and executives tend to overestimate their ability to lead and underestimate the complexities they will face.<sup>31</sup> This is called the *overconfidence bias*, which some researchers argue is the chief peril confronting leaders in large organizations today.<sup>32</sup> Leaders with past successes are most susceptible to

falling victim to this bias; they believe they are better at making decisions and assessing risks than they actually are. This leads to actions that have unintended and often contradictory consequences.<sup>33</sup> The reality is that human behavior is often unpliant and unpredictable, which creates unforeseen challenges for those in leadership positions trying to influence employee behavior.<sup>34</sup>

To overcome the overconfidence bias, games should include specific goals allowing learners to see their progress against a particular target. Focusing on challenges like engaging an unhappy workforce, reducing rework throughout an organization, or retaining customers may help orient leaders toward their own strengths and weaknesses in approaching these common real-life workplace scenarios.

## Create the context, with increasing difficulty

The context of the story provides meaning and relevancy to the learner. Gamification allows context to continuously change by inserting increasingly challenging random events along the way. It provides an environment that can prepare leaders for the unknown. As gamification expert Karl Kapp explains:

“Well-designed educational games blend a task-related story with interactive games elements to help the player learn the desired behaviors, actions, and thinking patterns that support the desired outcomes within a particular context. Games can provide a visual and narrative context for player performance... Storytelling within

an instructional game allows learners a vicarious experience through the story, which they can apply to their work situation.”<sup>35</sup>

Immersive learning technologies offer one of the best ways to narrate the story of leadership development. Much like a real-life leadership experience, the story can become increasingly difficult, allowing protagonists to fulfill their need for achievement.

### **Allow the data to inform development**

One of the most compelling ways immersive learning technologies can be used in leadership development plans is through the use of data-driven insights. Too often, leadership development feedback is subjective and based on perceptions. Leaders participating in immersive learning are able to receive feedback on how their decision making impacted employees and the overall company culture. These data-driven insights can lead to greater self-awareness as well. Research suggests that higher-performing leaders possess more self-awareness of their own skill sets as well as how their actions impact others.<sup>36</sup> The immersive learning environment leads to data-enriched development. It provides the evidence needed for a learner’s reflecting stage.

### **Making it happen at your organization**

As discussed, adults learn best through experience and reflection. Serious gaming can provide an additional mechanism to acquire experience and reflection in a safe environment. In addition, the learning environment can be customized to specific scenarios, enabling leaders to acquire skill sets through

repeated problem solving with near-real circumstances. The data insights derived during these games can help leaders identify and modify existing schemas during the reflection phase. This can then lend itself to richer mentoring experiences, where expert leaders can help learners draw new conclusions and dive deeper into critical thinking activities.

If you’re ready to explore how to add gamification into your learning and development program, we recommend the following next steps:

**Research suggests that higher-performing leaders possess more self-awareness of their own skill sets as well as how their actions impact others.**

- Identify stakeholders within the organization who understand the importance of building a culture that supports innovation and learning

- Conduct an analysis of the current learning infrastructure as it applies to developing leaders (both formal and informal) and

look for strengths and gaps in the process

- Identify learning professionals within the organization who can champion the cause and who have a vested interest in changing the learning culture
- Start small by introducing game elements to more traditional settings, such as current classroom training, where there is already a high comfort level

In many ways, introducing serious gaming into a leadership development program allows leaders to build expertise and prepare for future events in a safe environment while offering significant psychological benefits. Combining the use of gaming and simulation technologies with psychology-based leadership development can offer exciting opportunities for tomorrow’s leaders.

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