

## Chapter 25

# Applied Gamification: Creating Reward Systems for Organizational Professional Development

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**Abstract** The authors will explore using digital badges as a form of motivation within an organization. In order to do this the authors will examine three different psychology theories; humanistic psychological theory, behavioral psychological theory, and Gestalt psychological theory, showing the relationship between motivation and digital badges. The position of this paper is implementing digital badges, leaderboards, and points, in an organization's human resource development strategy will result in the influencing of behaviors an organization wants to target or change. The authors will discuss the overall application of digital badges, leaderboards, and points within the organizational context, specifically, internal gamification, where game mechanics are use to motivate staff to improve productivity, foster team work, or to create other positive changes in the organization.

**Keywords** Enterprise gamification • Psychological theory • Human resource development • Digital badges • Game mechanics

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# 1 Introduction to Organizational Application of Gamification

Organizational learning tends to be given in disconnected chunks (Kapp, 2012). Policies, procedures, guidelines, and best practices are often taught and learned as memorized tasks by employees. These didactic rules intended to improve and help learners make deep connections with work experiences, often have the opposite effect (Kapp, 2012). Employees become unmotivated, bored, and disengaged with their tasks and training at work. Gamification is one strategy organizations can use to engage learners, aiding in knowledge retention, creating positive patterns in service, increasing user activity, and ultimately changing behaviors (Hamari, Koivisto, & Sarsa, 2014; Kapp, 2012).

Human resource departments are incorporating gamification strategies as a tool to recruit, develop, and evaluate talent. Donston-Miller (2012) indicates that by 2015, approximately 50% of organizations that manage innovation processes will find ways to gamify those processes. Furthermore, gamification continues to grow as an industry, its value is currently estimated at around \$100 million and it is projected to grow to \$2.8 billion by 2016 (Erwin, 2012). With these projections, gamification seems to be a lingering trend, therefore, it is important to explore the possible impact gamification will have on AE/HRD and how it can improve organizational processes.

The purpose of this chapter is to explore gamification through the behavioral and humanistic psychological frameworks; focusing on the tools of internal, behavior-change gamification and how these tools can be applied to organizational professional development. More specifically this chapter will focus on the tools of internal and behavior-change gamification that involves using digital badges, leaderboards, and points within the organizational context.

## 1.1 Gamification

Gamification is defined as “using game-based mechanics, aesthetics, and game thinking to engage people, motivate action, promote learning, and solve problems.” (Kapp, 2012, p. 12). It’s important to note that gamification does not necessarily mean creating a full game, but incorporating gaming aspects to motivate and engage customers, students, and users (Deterding, 2012; Prince, 2013). Within gamification, the term interactive learning elements (ILE) is any combination of game mechanics applied to the learning environment (Kapp, 2012). Mechanics can include: achievements, avatars, badges, boss fights, collections, combat, content unlocking, gifting, leaderboards, levels, points, quests, social graphs, teams, or virtual goods (Werbach & Hunter, 2012).

Internal gamification, also called enterprise gamification, is when an ILE is necessary to motivate staff to improve productivity, promote teamwork, or to create

other positive changes within the organization (Kapp, 2012). External gamification is used to engage existing or potential customers and is driven by desired purchasing behaviors or marketing objectives (Werbach & Hunter, 2012). Both internal and external gamification can use gaming elements to create a desired behavior change among the user population (Werbach & Hunter, 2012).

In order to apply gamification, companies should do a needs assessment to determine the extent of the skills gap that requires mastery or the development that must take place to improve organizational processes. The needs assessment will assist in determining the type of gamification an organization needs. In the needs assessment, organizations should identify the goals, objectives, and target audience. Once the decision on the audience and type of gamification has been made, organizations then use the goals and objectives to define how game mechanics will be applied to create intended change.

## ***1.2 Digital Badges, Leaderboards, and Points***

Drew Robb (2012) states that games can encourage employees to complete training tasks by rewarding employees with points, badges, or through leaderboards to display accomplishments. Badges are visual representations of achievements, or defined objectives, and often badges and achievements are used as synonymous terms. While badges are visible symbols of accomplishment, a digital badge is an electronic symbol that uses an icon to represent skills or achievement, confer status, and motivate deeper engagement (Bowen & Thomas, 2014; Kapp, Blair & Mesch, 2013).

Player, or in this case, learner, progression and can be tracked on organizational, departmental, or team leaderboards. Leaderboards are a public way of showing progression in a game situation and are used by the organization and individuals to track progress in comparison with peers (Werbach & Hunter, 2012). Leaderboards are used to keep score, determine a win condition, create a connection between progression and rewards, provide feedback, externally display of progress, and provide data for easy tracking. Points in an organizational setting can be earned through attendance streaks, completing training course competencies, or receiving organizational recognitions like employee of the month. Achievement of a certain amount of tasks enables the employees to earn points, badges, and level up in expertise (Werbach & Hunter, 2012).

When application of these aspects of gamification are combined with a strong needs assessment that supports the organization's goal for professional development, an organization is granted a unique opportunity to positively impact the working conditions of an organization. An organization owes it to themselves and the professional development of its human capital to fully investigate the benefits that gamification and its mechanics can bring to the way training and learning takes place within its HR department.

## 2 Conceptual Framework

The position of this chapter is that the implementation of gamified aspects, particularly digital badges, leaderboards, and points, in an organization's human resource development will result in the influencing of behaviors an organization wants to target or change. Many HRD theories support gamification and game mechanics, and provide further support for an organization's choice to adopt gamification and game mechanics into their organizational policy.

### 2.1 Behavioral Theory and AE/HRD

As stated in *Psychological Foundations of HRD* the main focus of behavioral theory, also known as learning theory, is the observable change of behavior (Reio & Batista, 2014). In behavioral theory, knowledge and skills are thought to be an accumulation of each individual's personal experiences with their environments. The two most studied behavioral theories in the context of AE/HRD are operant conditioning and social learning (Reio & Batista, 2014). Operant conditioning focuses on reinforcing behavior based on rewards or punishment; while social learning focuses on how individuals acquire personality characteristics and social skills through observational learning or modeling (Reio & Batista, 2014).

Digital badges can be an extrinsic motivator by giving learners attainable and challenging goals (Jovanovic & Devedzic, 2014). "Learners who are rewarded from their effort or improvement instead of their performance tend to be more persistent on tasks and more orientated towards learning and improving" (Jovanovic & Devedzic, 2014, p. 58). Badges reward learners based on progress and/or improvement on a specific task (Jovanovic & Devedzic, 2014). When considering what is rewarding to the learner, the designer introduces something measurable and meaningful, giving the learner something to strive for, therefore increase their motivation to succeed (Werbach & Hunter, 2012). By using digital badges as a reward to completing tasks or participating in training, HRD professionals are actively and subconsciously changing and influencing employee behavior.

### 2.2 Humanistic Psychology and AE/HRD

"Humanistic psychology concerns itself with humans' intrinsic motivation to grow" (Reio & Batista, 2014, p. 7); stressing that we must pay attention to the individual's way of seeing the world to understand him or her best. Adult learning theory has been strongly influenced by the humanistic tradition. Knowles's Theory of Andragogy, the study of adult learners, postulates that adult learners are more likely to learn when they see the relevance of their learning to their everyday tasks

(Knowles, 1980). Although it seems as though points, badges, and achievements are introduced in gamification as objects of desire that have no real meaning; an engaged learner can find meaning in the objects which may come in the form of personal exploration and expression, contextual awareness, social connectivity, or that irrefutable tendency for games and play (Jensen, 2012).

What we know about humanistic psychology is, as a response to behaviorism and psychoanalysis, that behavior is a manifestation of what is in the mind of a human (Reio & Batista, 2014). If the goal of an organization is to change or influence a behavior to achieve a desired result, the minds of the target population must be trained to accept this desired behavior as positive. However, humans respond to incentive, despite it being the positive or desired thing to do. In humanistic theory, the idea of self-actualization is integral and thus, to actualize the end of a game and receive a reward for doing so may result in the desired end result of the organization (Reio & Batista, 2014).

Formal learning does not typically allow for failure, exploration, or trial and error. Most learners do not want to fail (Kapp, 2012; Werbach & Hunter, 2012). However, gaming elements actually encourage failure by allowing learners to explore their learning environment and granting multiple opportunities to perform a task until mastery (Kapp, 2012). As learned from Knowles (1980), adult learners want shared responsibility and self-direction in their learning. Exploring the environment allows users to shape their learning path, similar to Knowles's suggested learning contracts where "individuals make use of all of these resources in a systematic program of continuous self-development" (Knowles, 1980, p. 142). Additionally, badges serve as a visual symbol of the learner's personal knowledge journey, including what knowledge they find personally valuable, by showing off skills or competencies earned (Bowen & Thomas, 2014).

### **2.3 Gestalt Psychology and AE/HRD**

Gestalt psychology, also known as gestaltism, is a school of thought that looks at the human mind and behavior as a whole (Reio & Batista, 2014). It is a cognitive theory centered on how individuals interpret the stimuli around them. The theory informs the AE/HRD field on how individuals move from one learning experience to another, as well as how well they interact with others depending on perception. Using Gestalt psychology, AE/HRD practitioners can better understand how perceptions and other elements play a role in group and team interactions (Reio & Batista, 2014).

Gestaltism has principles of perceptual organization that inform us how we form perceptions and therefore; how we make meaning based on our existing knowledge and way of making meaning from experience, unless we are able to witness our own process (Stevenson, Herb, 2014). These principles attempt to describe how people tend to organize visual elements into *groups* or *unified wholes* when certain principles are applied. The principles are similarity, continuation, closure, proximity, and figure and ground (Reio & Batista, 2014).

Using the Gestalt theory, AE/HRD must clarify the goals of individual contributors, work process owners, and/or organization leaders. By using the Gestalt principles learning is based on understanding the underlying principles of the problem. This type of learning comes from within the individual and is not imposed on by someone else. It is easily generalizable and is remembered for a long time (Clark, 2010).

Gamification ultimately provides a low-risk atmosphere for learners to experiment, practice, and receive constant feedback on their overall performance. Learners feel empowered to work through the learning environment resulting in increased engagement, motivation, and changed behaviors in the workplace (Robb, 2012).

### 3 Gamification in AE/HRD

Imagine if businesses used gamification to help streamline professional development goals so employees would know exactly how their skills are advancing and potentially which ones have actually grown instead of wondering, “How am I really doing?”, “Is my work performance being ranked fairly?”, and “How am I supposed to set goals if I have no idea what I am trying to achieve?” (Cook, 2013)

For an organization, digital badges give employers, managers, and employees visual representation of the user’s progress, skills, abilities, and competencies and can represent different levels of mastery of knowledge over time (American Alliance of Museums, 2014; Bowen & Thomas, 2014). Badges can provide guidance of what can be done within a new system, an important part of employee onboarding or system orientations (Werbach & Hunter, 2012).

More than 70% of the Global 2000 organizations have one internal, gamified system (Carey, 2012). Mozilla has collaborated with the National Human Resources Association and other organizations to help employers better understand how to use badges to motivate their employees (Grant, 2014). Many businesses and learning organizations are developing and credentialing digital badges including Purdue, Carnegie Mellon, the University of California, the Smithsonian, Intel and Disney-Pixar (Carey, 2012).

Delta Airlines use a travel game to promote competition and skills building within their organization. ILEs allow employees to navigate the globe, accessing activities and mini-games, to progress toward milestones and achievements, with the end goal of climbing to the top of the leaderboard. Delta found by using ILEs, user engagement and promoted internal competition has increased with more than 1400 players voluntarily playing the game in the first 2 weeks of launch. Within 2 month of its launch, Delta’s employees voluntarily logged more than 16.2 million minutes of time into the ILE, which translates to more than 30 years of learning (Cook, 2013).

Like Delta, Deloitte Digital, a part of Deloitte Touche Tohmatsu Ltd, uses points, digital badges, and leaderboards as motivators for their employees. Employees are awarded points for actions such as logging in, leaving a comment, or visiting a page. Leaderboards show where individual employees rank and allow employees to identify company experts. When badges are awarded employees tend to display them on their Twitter or LinkedIn profiles (Robb, 2012).

A great example of seeing gamification translate to an increase of organizational productivity involves LiveOps Inc., a company which runs virtual call centers. It uses game based elements to help improve the performance of its 20,000 call agents who are independent contractors and are located all over the U.S. The company awards badges and points for tasks such as keeping calls brief and closing sales. They use leaderboards to allow users to compare their achievements to that of their peers. Since implementing the points, badges, and leaderboard, LiveOps, Inc. has seen agents reduce call time by 15% and increase sales between 8 and 12% (Silverman, 2011).

If the business world did not provide enough evidence of gamification increasing employee productivity and output, there certainly exists evidence that shows gamification contributes to adult education, overall. Take for example the Learning Technologies unit at the University of Washington (UW). UW replaced their seniority based promotion system with a skill-based system using digital badges as a catalyst. Badges are used to clarify the university's expectations of employee knowledge and paths of growth and are awarded for specific activities and for achieving mastery and expertise on a skill set. Staff members report increased motivation from both the clear objectives and self-directed nature of learning (Botra, Rerselman, & Ford, 2014).

Another adult education example is the ICT for Rural Education Development (ICT4RED) project initiated by the South African Department of Science and Technology (DST) in collaboration with the South African Department of Basic Education (DBE), the Eastern Cape Department of Education (ECDoE) and the South African Department of Rural Development and Land Reform (DRDLR). The organization use badges linked to technological and pedagogical goals, competencies, and formative assessment for teacher education. The design of the system guides the learners through a learning path providing feedback in the form of a badge as learners complete assessment items. Badges are displayed using Mozilla's Open Standards Backpack, so they can be displayed on the learner's social networking profiles. While ICT4RED hopes the system will encourage the learner to become lifelong learners and contribute to the digital world, the project has received already positive feedback from learners (Botra et al., 2014).

## 4 Suggestions and Challenges

Although there is tremendous potential in using digital badges in HRD, there are a number of challenges and best practices to consider. The examples listed all serve to build a case for the implementation of ILE's into current adult education and professional development trainings. The key for stakeholders interested in creating a gamified learning environment is conducting a strong needs assessment that highlights motivational gaps within the organization. Organizations should then probe further by assessing whether gamification of that gap will improve the current process or can if it can be improved through other means.

Adding in game mechanics to organizational learning takes purposeful planning (Botra et al., 2014). Often badge implementation needs a curriculum with learning pathways which can be more complex than just defining learning objectives (Grant, 2014). Although traditional teaching may not be the center of rewarding badges, facilitation and guiding of learning is still an important component to the learning process (Botra et al., 2014).

Once an organization establishes that gamification is the route to ensure engagement in training, it is important to frame the conversation with employees so the implementation has value for the employee. ILEs, digital badges, leaderboards, and points will serve to report to the employee how they are doing, feedback, and clear paths for learning and success. The user experience is extremely important when deciding how to implement badges in organizations. Badges should be designed to reward desired behaviors and organizations should be cautious of handing out meaningless awards or badges (Silverman, 2011). Badges should be relevant and meaningful to the learners, so it is advisable to study and get feedback on what the learner values (Grant, 2014). This should be part of the needs assessment an organization would implement long prior to incorporating ILE's into their training structure. Without the collaboration between the organization and employee on how gamification will be built into the organization's structure and continuous feedback from the employee, the results presented above may not represent the organization's experience with gamification.

It should be mentioned that badges can have negative impacts on motivation, including increased organizational competition which can create animosity among employees (Hamari et al., 2014; Silverman, 2011). Extrinsic rewards can be demotivating, so it's important to attach extrinsic rewards to specific outcomes and not to activities that can be motivated with intrinsic regulators (Werbach & Hunter, 2012). "The system will likely fail if you don't get this right" (Grant, 2014, p. 46). These considerations should be part of the game-design strategy an organization rolls out. Furthermore, organization should expect the implementation of game mechanics to be met with some level of resistance. It is important to highlight the benefits other businesses and educational institutions have with the implementation of gamification. It may not remove all possibility of negativity arising amongst a team, but it would be better to frame healthy competition before your gamification experience is rendered meaningless due to the attitudes of participants.

One of the benefits that can be highlighted to organizations who are considering gamification is standard credentialing. Due to the flexibility of badges, they can be used as part as of credentialing functions to demonstrate skills or competencies from an internal organization or from external trainings. Companies, such as the Mozilla Foundation, are building digital badge infrastructure to support badges, and provide a common baseline for badges issued by credentialing bodies. The infrastructure provides a platform to authenticate badge credentials, such as learning outcomes, issuer, and tasks completed, just by viewing the badge digital encoded data (Robb, 2012). However, badge creation and authentication tools are still in the infant stage and universal standards are not well established (Grant, 2014). This leads to wider challenges as badges become more popular and widely distributed, who and how will we regulate badges, will the establishment of some standardizing



body on the legitimization of badges be necessary? Do we want that practice to be by industry? Or by organization? There are many unanswered questions to consider here. Using a digital medium also introduces concerns about identity management, learner privacy, and security (Grant, 2014).

Finally, mid-level management has to be a strong promoter of gamification in an organization. As part of the needs assessment performed, these key stakeholders should be eliminated as a major contributor of the motivational gap found within the organization prior to implementing any new training structure. As Kris Duggan, chief executive of game-maker Badgeville cautions: “adding gamification to the workplace drives performance but it doesn’t make up for bad management. If you are a bad manager, gamification won’t help you” (Silverman, 2011).

## 5 Conclusion

While there is evidence that suggests that gamification drives workplace performance and can contribute to generating more business through the improvement of services provided; it can turn out to be a costly, wasted effort if it is not framed precisely for what it aims to change. So that the foundational aspect of gamification, to motivate adult learners to improve, is not lost in the idea of fun and games; it is important that an assessment of the end result of the training is fully explored and that there is a strategy for transitioning into the assessment phase of the ILE.

Gamification is a tool, intended to keep employees motivated and engaged in the idea of training. In many of the examples provided, companies who were interested in being at the forefront of innovation found value added by incorporating game elements into their organizational processes and trainings. Companies values included that of collaboration and exploration, so a company’s culture has to be open and flexible to accommodate ILEs in its structure.

The purpose of this chapter was to explore gamification through the behavioral and humanistic psychological frameworks; both of which offer support to the idea of gamification as part of a long term AE/HRD strategy. In reality, badges are not a new idea, and they do the same thing as credentials. However, the introduction of digital platforms for badges creates a more transparent system, making criteria, learning artifact, and assessments directly linked to the badge earner and issuing organization (Grant, 2014). Adding in game mechanics to a learning organization can foster a more engaging learning experience (Prince, 2013). However, critically speaking, gamification is not for every organization. Therefore, further study should be completed on the learner motivation and engagement with digital badges, particularly long term knowledge transfer.

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