

# Role of Gamification for Increasing Employee Self-Leadership and Self-Concordance

**Ena Pomare and Tomek Piatek**

*Department of Social Sciences Management, Cayetano Heredia Peruvian University, Peru*

## **Abstract**

Organizations today continue to seek new and effective ways to engage and motivate their workers. Gamification is an emerging means for enhancing employee engagement and motivation at work. Self-leadership is a comprehensive self-influence process that has the potential to help employees find meaning and purpose from their jobs. This paper develops and presents a conceptual model of the relationships between gamification self-leadership and valued workplace outcomes. The model suggests that gamification elements trigger multiple self-leadership processes and states that interact in a multiplicative fashion leading to a state of self-concordance in which individuals perceive a close alignment between their work tasks and their personal interests and core values. This serial mediation model helps to explain how and why gamification operates through the mediating mechanisms of self-leadership and self-concordance to effect important individual and organizational outcomes. Future research directions and implications for the proposed conceptual model are also discussed.

## **Keywords:**

Gamification; self-leadership; self-determination; self-concordance; self-efficacy; creativity

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“In every job that must be done there is an element of fun. You find the fun and snap!  
The job’s a game”

—from the song A Spoonful of Sugar Helps the Medicine Go Down in the movie Mary Poppins

## **1. INTRODUCTION**

Organizational leaders have long sought after the most effective ways to engage and motivate their workforce. These efforts become even more challenging as the workforce itself changes and evolves over time. Recently Larry Clark the managing director of global learning solutions at Harvard Business Publishing Corporate Learning suggested that the global workforce is experiencing three key shifts that may help organizations understand how they need to think and act differently in order to engage and motivate their employees (Clark2020). He argues that generational diversity continuous learning and the search for meaning at work will define what he calls the workforce of the future (Clark2020). He further suggests that this new workforce is asking for three things in order to be engaged: include me (allow me to bring my own values and diversity into the workplace) inspire me (with a combination of autonomy and purpose) and grow me (with career pathways and learning opportunities) (Clark2020).

Gamification which involves applying elements from game design in non-game contexts (e.g. Deterring et al.2011) is one potential means through which organizations may be able to effectively engage and motivate a new generation of workers. Game elements when added to jobs marketing campaigns social media platforms and other contexts have been found to produce a variety of positive outcomes (Sailer et al.2017; Landers et al.2018). Furthermore the list of companies that are making use of gamification elements within their organizations continues to grow (e.g. Cisco Aetna Nike Google Deloitte Samsung and Siemens). Still relatively little work has been done within the literature on gamification regarding how these game elements are able to motivate these valuable outcomes. Indeed the theoretical mechanisms that underlie the motivational properties of gamification have been largely neglected and are oftentimes dismissed with vague nods to established theories in the social sciences (e.g. self-determination theory social cognitive theory etc.).

In this paper we seek to provide some clarity to this issue by examining self-leadership a comprehensive process of

self-influence through which people can shape their own cognitive and behavioral outcomes (e.g. Stewart et al.2011 2019) as a possible explanation for how gamification can increase valuable outcomes in the work environment. We develop and present a theory-based conceptual model of gamification and self-leadership along with a series of supporting research propositions. In short our model suggests that gamification elements will trigger interactive self-leadership processes that will result in a state of self-concordance which occurs when work tasks closely align with an individual's interests and core values (Sheldon and Elliot1999) and ultimately with key outcomes. Therefore the aim of this current research is to better understand the role of self-leadership in the context of a gamified working environment and how these can lead to employee feelings of self-concordance. As many companies have begun using gamification design principles we suggest that it is incumbent on the research community to study its effects on employees and organizations. Our current research offers a conceptual model that can guide future researchers in meeting that goal.

Our paper and conceptual model offer a number of contributions to the gamification and self-leadership literatures. First our model aims to provide some additional theoretical underpinnings to explain the mechanisms and processes through which gamification can affect valued outcomes. Second much of the self-leadership literature has positioned self-leadership as a key antecedent to various outcomes (Stewart et al.20112019). Studies exploring the antecedents of self-leadership are rare (for a notable exception seeCristofaro and Giardino2020). Consequently we add to the self-leadership literature by exploring gamification as a possible antecedent of self-leadership and self-leadership processes as a possible mediating mechanism through which gamification influences outcomes. Stated differently we examine gamification as a potentially useful job design system that could increase individual self-leadership.

## 2. GAMIFICATION

To understand the proposed relationship between self-leadership and gamification we must first define and investigate what gamification is how it has been studied and why it could be potentially useful in the context of management. Gamification has been defined in the literature as the —use of game design elements within nongame contexts (Deterding et al.2011 p. 9). Though this definition is broad it differentiates the construct from other related concepts such as serious games. Serious games aim to increase learning with actual games while gamification in contrast uses gamification elements that have various motivational properties within a non-game context. For instance a commonly used and easily understood gamification element is the use of points and levels. Points and levels can be injected into almost any existing system wherein user actions can be quantified. Therefore gamification is not the creation of games in an effort to motivate people but rather is the incorporation of game elements into otherwise normal or mundane systems. Nevertheless the use of such game elements do make these normal systems and activities appear more game-like in nature.

Gamification has been used in a wide variety of contexts including training and development (Armstrong and Landers 2018;Baxter et al.2016;Tansley et al.2016) performance management systems (Armstrong et al.2016;Cardador et al.2017) marketing (Robson et al.2014) energy conservation campaigns (Wee and Choong2019) and education (Buckley et al.2017;Hanus and Fox2015). Indeed many of the common apps used in our modern world demonstrate the prevalence of gamification elements. For instance the recent popularity of Noom a behaviorally focused weight loss app displays the efficacy of using gamification elements within an otherwise non-game context. Audible a popular audiobook platform makes use of badges and other gamification elements to motivate and encourage the use of their app. Applications of gamification elements within our modern world are myriad and so ubiquitous that they almost go unnoticed or unexamined. Still research on this potentially useful construct and tool has received increased research attention over the past decade in an effort to understand its effects on human behavior and cognition (Cardador et al.2017;Feng et al.2018;Sailer et al.2017;Sailer and Homner 2020).

### 2.1. Gamification Elements

Many game elements could be used in the gamification of otherwise mundane activities but some have been described and studied more fully in the growing gamification literature (Landers et al.2017;Sailer et al.2017;Sailer and Homner2020;Bedwell et al.2012; Dicheva et al.2015;Wilson et al.2009). In this section we briefly describe some of these gamification elements. Importantly gamification elements have mostly been studied as bundles rather than in isolation.

Gamification most often involves a system of points and levels. Points are a quantified form of feedback to users and are found in both gamified and non-game contexts. Points go by various names and sometimes have their labels modified to fit the context in which they are being used (e.g. —experience points!). Furthermore points are generally coupled with levels which are essentially cutoffs at which new benefits and/or responsibilities are gained. Oftentimes when a certain amount of points is attained by a user levels are awarded. Levels can convey a kind of status that may stretch beyond the limits of the gamified system itself. For instance frequent flyer miles could be considered a type of

points while earning a silver gold or platinum status within a given program would be considered a type of level that conveys a sense of social status.

Leaderboards are also commonly used in gamified systems to tap into a more competitive or relational urge for comparing one's progress and achievements to others. Leader-boards usually involve a ranking system that shows who is performing best in the gamified system. These rankings can be based on progress levels points or general performance. Furthermore these ranking systems are usually visible to the participants so that they can see how well they are doing relative to others. Empirical research has shown that leaderboards can successfully increase employee task performance (Landers et al.2015). Furthermore in one recent report Amazon has been making use of gamification in their warehouses to increase productivity of their employees (Statt2021). These systems allow employees to enter their shift results into a leaderboard where they can be ranked among other workers in that warehouse and other Amazon warehouses. Amazon must think these systems are beneficial as they are reportedly adding more of these gamified systems in at least twenty additional fulfilment centers (Statt2021).

Badge systems are also a common type of gamification element found in these types of systems. They are usually award for activities performance or behaviors that are considered extra-role or outside the normal required scope of the tasks or job (Sailer et al.2017; Hamari2017). For instance in a college course a student might earn a badge for having read an academic article that was not assigned as a normal part of the course but was instead a —recommended reading that could be useful in reinforcing the learning objectives for the course. Badges systems are also used in consumer products in an attempt to increase engagement. For instance Audible.com uses badge systems in their app awarding badges for activities such as rereading a book multiple times.

Collaboration/competition is another common element in most games and gamified systems and refers to the competitive or cooperative nature of games and game systems. Sometimes collaboration and competition work in concert with one another. For example sport teams must cooperate to compete against other teams (i.e. football basketball etc.). This is also true of virtual games in which teammates and/or competitors are non-player characters (NPCs) controlled by various game mechanics or artificial intelligence (AI).

Avatars are a visual representation of a participant within a game or gamified context. Avatars can be as simple as the top hat token in the case of Monopoly or as complex as a three-dimensional representation of the participant in a virtual setting (Sailer et al.2017). These avatars can take on incredible meaning for participants in some online environments as a forward-facing representation of themselves. For instance in a popular online game for children called Roblox players spend a great deal of time and money to customize their avatar and buy outfits or modifications for their avatars. This may seem silly in many respects to an outsider looking in but for these participants it is akin to wearing the latest fashions or engaging in personal grooming before going out. For some people their avatar's appearance and movements are very important representing their actual or ideal self in the game context.

Narratives and themes are another common element within gamification. Stories and themes built around a gamified system can add gravity or levity to what would otherwise be a mundane activity. A well-crafted story overlaid onto tasks or jobs can increase engagement and —alter the meaning of real world activities (Sailer et al.2017 p. 373). These narratives and themes vary widely in both complexity and substance. For instance a theme could be simply a horse trying to win a race or a whole world with intriguing backgrounds and histories where participants must interact with and change the world in some fantastic way. In either case interesting contexts are added to mundane tasks projects and jobs enhancing them with imagined meaning to increase overall interest and engagement.

One final gamification element we will discuss here is that of choices. Choices are seldom studied as a common gamification element (Charsky 2010) but they are clearly a crucial part of games and game environments. As Rollings and Morris(2000 p. 38) observed —a game is a series of interesting choices. In fact the efficacy of many other gamification elements hinge on this important game element. For instance points essentially provide feedback on choices (better choices lead to more points). Similarly the creation and selection of avatars are based on a series of choices by the user. Therefore we suggest that choices are a critical element that should be discussed in any gamification research.

## *2.2. Gamification Outcomes and Research*

Gamification has been studied in a variety of contexts and has been found to positively affect various outcomes of interest for organizations. For instance in empirical studies gamification has been found to increase user activity (Hamari2017) motivation (Kyewski and Krämer2018) affective reaction to training (Sailer et al.2017) engagement (Aldemir et al.2018; Barata et al.2017;Santhanam et al.2016) task performance (Landers and Armstrong 2017;Mekler et al.2017) and perceived task meaningfulness (Sailer et al.2017). Furthermore gamification has been examined for use in educational settings (Buckley et al.2017;Dom ínguez et al.2013) consumer marketing experiences (Robson et al.2014;Hamari2017) and organizational settings ( Armstrong and Landers2018;Landers et al.2017;Baxter et al.2016;Silic and Lowry2020). Still some mixed results have been found for the effectiveness and use of gamification in these contexts. For instance Kyewski and Krämer(2018) found that for a sample of students badges did not have a very

strong effect on motivation user activity or student performance. Furthermore they found that when badges were public and viewable by other students in the class they were viewed less positively than if they were hidden from all but the student who earned them (Kyewski and Krämer2018). Additional Mekler et al.(2017) performed an experiment and found that gamification only increased the quantity of tasks completed but did not improve the quality of the work. These findings may have important implications regarding usefulness of gamification.

Other problems exist within the study of gamification. For instance some gamification elements suffer from definitional problems and issues with the operationalization of these constructs. For example Kyewski and Krämer(2018) gave badges for classwork that was required as part of a college course which runs counter to the conceptual definition of badges described above namely that badges should be awarded for extra-role behaviors and not for required tasks. Furthermore these badges were studied in isolation from other gamification elements and as noted above gamification is usually studied in terms of bundles of game elements (Mekler et al.2017;Nacke and Deterding2017;Sailer et al.2017).

The importance of exploring bundles of gamification elements will become clearer as we develop the relationships in our proposed conceptual model.

### 3. SELF-LEADERSHIP

Self-leadership is a comprehensive self-influence process involving both behavioral and cognitive states and strategies aimed at positively shaping individual performance outcomes (Neck et al.2020;Stewart et al.20112019). Inspired by Kerr and Jermier(1978) conceptualization of —substitutes for leadership|Manz and Sims(1980) suggested that one such substitute could be followers' abilities to engage in self-management. They went on to explain that individuals can manage their own behaviors by setting their own performance standards evaluating their own performance relative to those standards and administering positive and negative consequences for themselves relative to their evaluations (Manz and Sims1980). Specific self-management procedures include self-observation (i.e. gathering data about one's behavior that serves as a baseline for subsequent evaluation and consequences) self-goal-setting (i.e. specifying goals for oneself) and self-rewards (i.e. establishing self-evaluation-based reward contingencies) (Manz and Sims 1980). Behavioral self-management subsequently became established as an effective means for shaping behaviors and performance outcomes in the workplace (e.g. Andrasik and Heimberg 1982;Frayne and Latham 1987;Frayne and Latham 1988;Saks and Ashforth 1996).

Manz (19861991) later argued that behavioral self-management painted an incomplete picture of the full scope and potential of employee self-influence at work. He introduced the concept of self-leadership as an expanded and more comprehensive process involving a higher level of self-influence and a wider range of selfinfluence states and strategies (Manz1986) .Manz(1991) described the differences between self-leadership and self-management with three basic questions: —What?! —Why?! and —How?! He noted that self-management's self-influence processes and strategies focus primarily on how tasks are to be accomplished in order to meet externally set standards and objectives while relying largely on extrinsic motivation and focusing primarily on behavior (Manz1991). In contrast self-leadership's self-influence processes and strategies address what should be done (i.e. developing the standards and objectives) and why it should be done (i.e. engaging in strategic analysis) in addition to simply determining how the task should be done (Manz1991). Moreover self-leadership fosters intrinsically motivating states and involves a much greater focus on cognitive processes (Manz 1986 1991).

In conceptualizing self-leadership Manz(1986) noted that self-management involves rewards such as selfpraise or external recognition that are separate from the task itself. Drawing on self-determination theory (Deci and Ryan1983) as a conceptual foundation he described the broader self-leadership perspective as explicitly emphasizing rewards resulting from the tasks themselves which he called —natural rewards| (Manz1986 p. 591). He went on to detail three naturally rewarding states that he suggested would be associated with self-leadership's higher level of self-influence: feelings of competence feelings of selfdetermination or self-control and feelings of purpose (Manz1986). Feelings of competence stem from viewing oneself as effective and capable relative to a specific task or activity (White1959). For instance someone who is an adept skier is likely to experience feelings of competence from the activity of skiing itself that will motivate them to continue to ski and refine their skills apart from any external rewards or compliments from other. Feelings of self-control result when individuals see their behaviors as self-chosen and self-directed rather than dictated pressured or coerced by someone else (DeCharms1968). Activities in which people are free to choose their actions and performance methods tend to enhance their feelings of self-control. For example the skier who is free to choose which slopes to ski how fast to ski and with what techniques will likely be more motivated by the activity of skiing than a member of the ski patrol whose actions on the slopes are largely determined by rules regulations and the external expectations associated with their jobs. Finally feelings of purpose flow from a sense that one's participation in a task or activity is meaningful worthwhile and self-relevant (cf.Vansteenkiste et al.2018). Even if an activity makes a person feel more competent and more self-controlled motivation may still be lacking if the person finds the task to be meaningless and irrelevant. As an example altruism the selfless concern for the well-being of others is one way in which activities

may be imbued with purpose (Smith2018). Hence the ski patrol members may still find their work to be naturally rewarding if they find meaning and purpose in helping others on the slopes.

Certain specific natural reward strategies may complement self-management strategies of self-observation self-goal-setting and self-reward (Andrasik and Heimberg1982; Manz and Sims1980) in order to enhance feelings of competence self-control and purpose (Manz1986;Neck et al.2020). First work context strategies involve choosing or structuring one's work environment so that it is more naturally rewarding (Manz1986). For instance decorating one's work space with objects and photographs that reflect one's values interests and past accomplishments or choosing to run on a beautiful mountain trail rather than on a quarter-mile track can enhance feelings of self-control (choosing one's environment) feelings of competence (highlighting one's current and past accomplishments) and feelings of purpose (connecting to one's values and adding meaningfulness). Second task performance process strategies focus on how a given task is performed and involve building naturally rewarding activities into the task wherever possible (Manz1986). Listening to music or a podcast while performing an otherwise uninteresting task is likely to make the activity more enjoyable and more naturally motivating. Third task focus strategies involve shifting the focus of one's thoughts to the more pleasant and naturally rewarding aspects of a task (Neck et al.2020). Most activities include both pleasant and unpleasant aspects and this strategy involves choosing to think about the parts of a task that one enjoys rather than the parts that one dislikes. For instance first-year doctoral students required to read a large number of journal articles could focus on the fact that they did not choose the articles on the large number of pages assigned on their inability to understand the complex research methods used in the studies and on their perceived disconnect between the narrow and esoteric academic research topics and their past work experiences. Such a focus would doubtless undermine intrinsic motivation by reducing feelings of self-control (the articles were arbitrarily assigned) feelings of competence (lack of knowledge of research methods) and feelings of purpose (esoteric research topics disconnected from practice). In contrast these students could choose to focus their thoughts on the naturally rewarding aspects of the activity. For example students could focus on when and how they read the articles (e.g. while drinking coffee at a local coffee shop) thus enhancing feelings of self-control on how much they are learning and expanding their knowledge of the research topics thus elevating their feelings of competence and on the practical implications sections of the papers (helping them to see the connection to practice) thus increasing their feelings of purpose.

Manz (1986) suggested one additional category of self-leadership strategies: self-leadership of thought patterns Neck and Manz (19921996) subsequently developed these ideas more fully under the label thought self-leadership. Thought self-leadership involves the specific cognitive strategies of positive self-talk mental imagery and challenging dysfunctional beliefs and assumptions (Neck and Manz1992 1996). More recently self-leadership has been conceptualized as a three-dimensional construct that includes behavior-focused strategies (i.e. self-management) natural reward-focused strategies and cognitive thought-focused strategies (i.e. thought self-leadership) (Houghton and Neck 2002;Neck and Houghton 2006;Neck et al.2020).

#### 4. SELF-CONCORDANCE

Self-leadership is appealing and effective in part because of the underlying human capacity for intentional and purposeful self-regulation of behavior (cf.Bandura1991). However although most people set goals and strive to achieve them through self-regulatory processes they do not always attain their goals and are not always satisfied or motivated when they do. Some scholars have labeled such breakdowns in the self-regulatory process as —self-regulatory failures! (Baumeister and Heatherton1996). AsLocke and Latham(1990 p. 240) have noted —although people are natural self-regulators in that goal-directedness is inherent in the life process they are not innately effective self-regulators. Other researchers have argued that flaws in cognitive processes stem from selecting or adopting goals that do not align well with the individual's values and interests (Sheldon and Elliot1999). Self-concordance is defined as a state in which one's tasks and activities are closely aligned with one's interests and core values (Sheldon and Elliot1999). Empirical research studies have shown that people who experience a high level of self-concordance put forth greater effort and have greater vitality mood and life satisfaction than people with lower levels of self-concordance (Sheldon and Elliot1999;Sheldon and Kasser1995). Additional research examining self-concordance in the context of work has yielded similar results showing positive relationships for self-concordance with goal attainments and goal striving (Bono and Judge2003;Judge et al.2005) in-role and extra-role performance (Greguras and Diefendorff2010) and leadership emergence (Adriasola et al.2011). Furthermore self-concordance has recently been examined in relation to goal choices. Sheldon et al.(2019) found that goal self-concordance helps people choose goals that are intrinsically motivating and satisfying lending additional empirical support for the connection between self-concordance and positive forms of motivation.

Building on the work of Manz(1986) Unsworth and Mason(2016) argued that self-management strategies including self-observation self-goal-setting and self-reward are generally ineffective when used in isolation. They hypothesized and provided support with their empirical findings that self-management strategies and natural reward processes entailing feelings of competence self-control and purpose combine in an interactive and multiplicative fashion to create synergistic outcomes rather than in a simple complementary additive manner in which the presence of one can

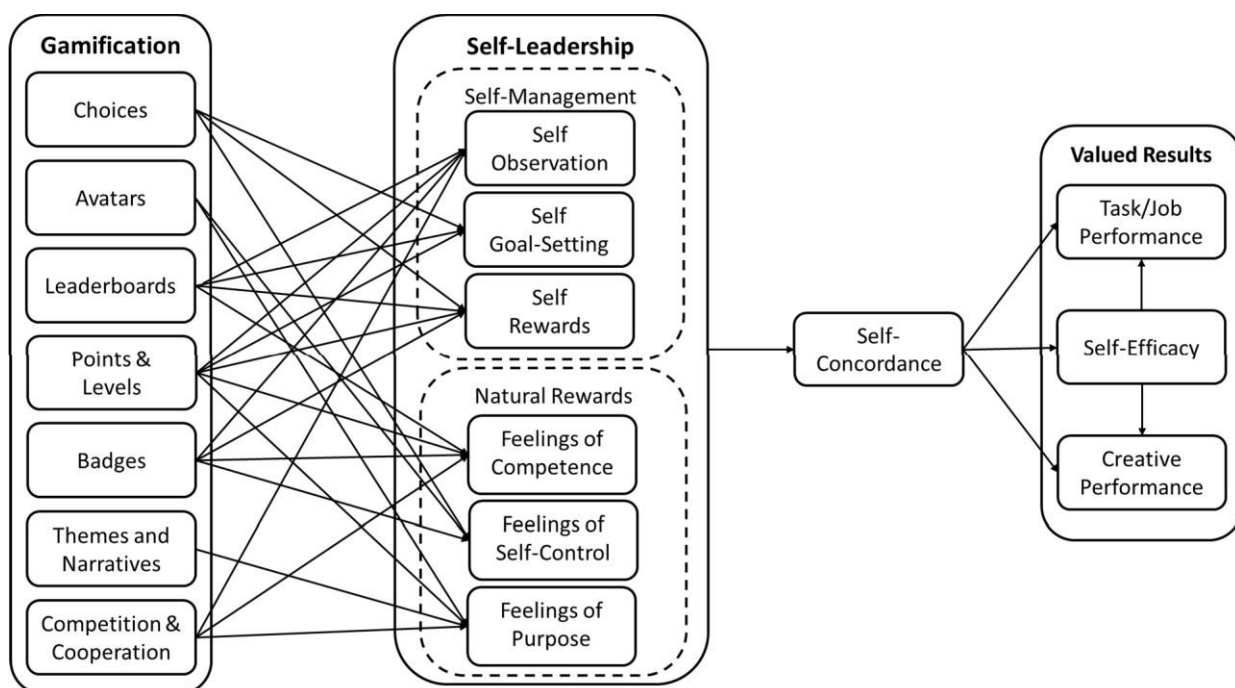
offset the absence of the other (Unsworth and Mason2016). Stated differently these results suggest that self-management and natural reward processes work together and interactively to enhance one’s state of self-concordance leading to increased motivation and striving and ultimately to valuable individual performance outcomes. If the processes of self-observation self-goal-setting and self-reward are unmoored from one’s underlying core values interests and self-identity then lower levels of effort and motivation are likely to occur (cf.Manz1986). However natural reward processes focused on enhancing feelings of competence self-control and purpose can be used to link self-regulatory and goal-setting processes to one’s underlying authentic values and interests (cf.Manz2015) leading to a self-concordant state (Sheldon and Elliot1999;Unsworth and Mason2016).

### 5. A MODEL OF GAMIFICATION AND SELF-LEADERSHIP

We will now develop and a present our proposed model of gamification self-leadership self-concordance and valued individual outcomes (see Figure1) and discuss how these concepts are related. In short we propose that various gamification elements when applied in conjunction with one another will simultaneously activate self-management and natural reward processes that will interact to enhance self-concordance and ultimately individual outcomes. It is important to note that our model does not incorporate self-leadership’s constructive thought focused strategies. Although these cognitive strategies are an important part of the full self-leadership picture we omit them from our model because we propose that the effects of gamification are mediated primarily through the interaction of self-management and natural rewards and not through constructive-thought processes.

The first set of links in our model (see Figure1) focus on how the various commonly used gamification elements affect the self-management and natural reward processes described in self-leadership theory. Each of the gamification elements are proposed to affect multiple aspects of self-leadership making gamification one possible antecedent to self-leadership and the benefits it can impart. Yet no single gamification element activates all of the aspects of self-leadership; therefore bundles of these game elements should be used in concert to see the benefits discussed herein. This bundling concept may help to explain why some previous gamification researchers have found mixed results when studying gamification elements. If elements are studied in isolation they likely will have less effect on the potential mediating and multiplicative influence of self-leadership. We therefore organize this section of proposition development around the individual self-leadership aspects of self-management (self-observation self-goal setting and self-rewards) and natural rewards (feelings of competence feelings of self-control and feelings of purpose). It is important to note that our propositions for this first set of linkages are based largely on theoretical and logical arguments as we have seen no evidence of empirical work done to test these relationships directly. Therefore the links proposed in this model between the gamification elements and self-leadership were derived through discussion and molded based on theory and logic.

**Figure 1.** A conceptual framework for understanding the relationships between gamification elements and self-concordance as mediated by self-leadership and how these can lead to valued individual outcomes.



The second link important to this model is that between individual aspects of self-leadership and self-concordance. A proposition statement and more full explanation follow below but the primary point here is that the aspects of self-leadership are positioned within this model as fulfilling a mediating role between gamification and self-concordance. However we do not suggest full mediation in this model as a direct effect might exist between some or all of the gamification elements and self-concordance and/or the valued results. For the sake of keeping this model as simple as possible we focus in the indirect mediating effects and do not show possible direct linkages that may exist.

The third link in our model is between self-concordance and the various individual valued results. This linkage is discussed further in the proposition development section where we rely heavily on past empirical studies to provide support for this proposed linkage.

### *5.1. Elements Influencing Self-Management*

Self-observation is a critical part of the self-management process wherein a person examines their progress and gathers feedback about their performance. Various gamification elements are well-suited to provide this feedback. As discussed earlier points and levels often serve as a feedback mechanism for performance that can be quantified. Points and levels therefore can provide quick and accessible feedback to a person and may be constantly updated based on ongoing performance. Likewise leaderboards give an employee significant information on how they are performing in relation to others. Badge systems also give a kind of feedback and can serve as a reminder to the employee as to their past performance and what is valued by the organization. Lastly competition and cooperation can also serve a role in providing data and feedback to an employee. Teammates often give feedback to one another during tactical or strategic decision-making in a cooperative setting. Similarly if a person is losing or their team is losing in a competitive situation this too can provide valuable information that is useful in self-observation. Therefore we suggest the following:

**Proposition 1.** The self-observation process is triggered by leaderboards points and levels badges and competition and cooperation.

Gamification may also be a useful tool to encourage the self-goal setting process for employees. Gamification furnishes quantifiable indicators of performance upon which employees can focus and base their goals. The elements available within a gamified system allows employees to set their goals based on outcomes such as ranking on the leaderboard for instance. They may set a goal to be in the top five or top ten in the leaderboard rankings or they might just want to get ranked above a co-worker. Either way goals can be self-set and with a great amount of autonomy. Furthermore points and levels are another easy and accessible way through which individuals can set goals for themselves. A person might wish to achieve a certain level as their goal or set a point amount they wish to reach. For these reasons we propose:

**Proposition 2.** The self-goal setting process is triggered by choices leaderboards and points and levels.

The final aspect of self-management is self-rewards. The choices involved with selfgoal setting also play a part in the self-reward process. Reaching goals that employees set for themselves is likely to be self-rewarding. For example an employee who has achieved a new rank within a leaderboard system can feel rewarded by having done so especially if this was important to them or they had set goals based on this achievement. Similarly gaining points and levels can be rewarding on their own but getting this positive form of feedback can activate self-rewards based on these systems. Badge systems are probably the best way to encourage selfrewarding processes. Badges are gained when a person performs a task that is both valued and outside their normal scope of duties. Therefore when a person sees that they have gained a badge they feel recognized and rewarded for their pro-organizational work. It is important to note that although these game elements could be conceptualized as extrinsic rewards we see them more as providing gamified feedback that employees internalize as intangible self-rewards (e.g. congratulating oneself for having earned a badge or moving up the leaderboard) or tangible self-rewards (e.g. taking oneself out to lunch at a favorite café for having reached a certain level). Based on these arguments we propose that:

**Proposition 3.** The self-rewards process is triggered by choices leaderboards points and levels and badges.

### *5.2. Elements Influencing Natural Rewards*

As much as gamification elements might be useful in encouraging the self-management aspects of selfleadership they may be even more important in terms of their ability to evoke the feelings associated with natural rewards. In fact most gamification researchers call on self-determination theory (Deci and Ryan19801983) to explain why these

gamification elements have motivational properties (Sailer and Homner 2020; Landers et al.2015; Cardador et al.2017). As the natural rewards dimension of self-leadership is founded on self-determination theory we expect to see strong relationships between gamification elements and feelings of natural rewards.

Feelings of competence come from the successful completion of tasks and from positive feedback about one's performance. Gamification offers numerous avenues to attain this positive feedback. For instance gaining in the ranking on a leaderboard can result in feelings of competence. This is especially true if a person is doing very well on a particular leaderboard. Similarly attaining points and levels work as positive feedback and should instill feelings of competence in an employee. As gamification systems generally offer real-time feedback usually in terms of points employees can evoke feelings of competence very quickly. Earning badges can also be useful in providing a feeling of competence. Oftentimes available badges are shown to participants in advance and when they are achieved they light up or color is added to them in the virtual setting. Therefore people might seek to get all of their badges to light up which would almost certainly inspire a feeling of competence in an employee. Lastly feelings of competence could be encouraged via competition and cooperation. In competitive contexts if a person is part of a winning team they will likely feel some level of competence. Similarly if a person is an integral part of a collaborative team they will feel that the team successes are at least in part due to their own competence. Therefore we offer the following proposition:

**Proposition 4.** Feelings of competence are evoked by leaderboards points and levels badges and competition and cooperation.

Feelings of self-control can be difficult to attain in organizational settings due to constraints on employees' time choices and levels of autonomy. Gamification could be useful in instilling a feeling of control in such tightly controlled environments. For instance since a well-designed gamification system will include choices and various paths for people to take to meet objectives and organizational performance goal this should evoke feelings of self-control for employees operating within such a system. Avatars should also be useful in this regard. Avatar selection and modification should allow individuals to experience more feelings of self-control. After all they are getting to make these choices as to how they will be represented in the gamified environment. Furthermore since badges are awarded for completing tasks outside the normal scope of the job an employee completing these should have feelings of self-control when choosing whether to engage in such activities. Therefore we suggest the following:

**Proposition 5.** Feelings of self-control are evoked by choices avatars and badges.

Feeling of purpose at work can be a highly individualistic issue that can be difficult for organizations to evoke or enhance. A well-worded and inspiring vision and mission statement might work to do this for some but others might ignore such an offering from an organization and take a more cynical view. Still it is possible that certain gamification elements incorporated into the task or job environment might help overcome this issue for organizations. For instance the use avatars and themes could be potentially impactful for encouraging these feelings of purpose. As discussed above themes and narratives can add meaningful context to mundane tasks and jobs making them more interesting. People who can suspend disbelief or allow themselves to be lost in a good narrative might thrive under such conditions at work. Instead of pressuring an employee to complete a project on time for a client the employee could be encouraged to imagine that these tasks are instead preparations to slay a dragon at the top of a mountain. This type of contextual meaning could artificially encourage feelings of purpose in one's work but artificial or not many of the feelings of natural rewards remain. Similarly if employees' avatars are representations of themselves then experiencing success with these avatars could be psychologically linked to their own success. Lastly cooperation and competition in gamified environments should also lead to feelings of purpose for employees. They might feel the need to win in a competition or be a good team member in a coloration. Either way these should evoke feelings of purpose in employees. Therefore we posit:

**Proposition 6.** Feelings of purpose are evoked by avatars themes and narratives and competition and cooperation.

### *5.3. The Mediating Effects of Self-Leadership*

Our conceptual model of gamification and self-leadership suggests that the positive effects of the various gamification elements will be translated into a state of self-concordance via the interactive and multiplicative effects of self-management and natural reward processes within the larger framework of self-leadership. As outlined in detail above Unsworth and Mason(2016) presented compelling evidence in support of their arguments that self-management processes will be relatively ineffective when used in isolation. They found that self-management and natural reward processes interact in a multiplicative way to affect outcomes as opposed to a more simplistic additive manner wherein more self-management could offset fewer natural rewards and vice versa (Unsworth and Mason 2016). Most notably they argued that the feelings of natural rewards (i.e. competence self-control and purpose) connect self-managing processes (i.e. self-observation self-goal-setting and self-reward) with individuals' true interests and core values resulting in a self-concordant state (Unsworth and Mason 2016). Our model builds on the work of Unsworth and Mason



(2016) by explaining one potentially effective means through which the interactive and multiplicative effects of the two joint facets of self-leadership may be triggered and evoked. We posit that bundles of gamification elements working together in a gamified system have the potential to simultaneously activate elements of self-management and natural reward leading to the synergistic and multiplicative effect described by Unsworth and Mason (2016). Here again we note that specific gamification elements in isolation are not likely to simultaneously engage the full spectrum of both self-managing and naturally rewarding processes that will lead to the interactive mediating effects described above. Mixed results of previous gamification research exploring individual elements (e.g. Kyewski and Krämer 2018) may be attributable to a lack of understanding of the mediating effect explained by our model. We formalize the explanation offered by our model with the following:

**Proposition 7.** The self-leadership dimensions of self-management and natural rewards will interact to mediate the effects of gamification elements on self-concordance.

#### *5.4. Self-Concordance and Valued Outcomes*

Finally our conceptual model suggests that a state of self-concordance will result in valued individual outcomes. When individuals experience a high degree of self-concordance they are likely to be more satisfied more motivated and more likely to increase their efforts when compared to individuals experiencing a disconnect from their core values and interests (Sheldon and Elliot 1999; Sheldon and Kasser 1995). Indeed as noted earlier empirical research has found positive relationships between self-concordance and goal outcomes (Bono and Judge 2003; Judge et al. 2005) and work performance (Greguras and Diefendorff 2010). Based on these findings it seems reasonable to suggest that a state of self-concordance would be related to key individual performance outcomes such as task performance self-efficacy and creativity. Consequently we advance:

**Proposition 8.** A state of self-concordance will lead to valued individual outcomes including job performance self-efficacy and creative performance.

## **6. DISCUSSION**

This article develops and presents a conceptual model of gamification and self-leadership. More specifically we propose a series of linkages from gamification as a job design system through self-leadership to self-concordance which is associated with various positive individual and organizational-level outcomes. Importantly our model shows that game elements when bundled with other game elements can activate both the self-management and natural rewards aspects of self-leadership simultaneously. Furthermore these two aspects of self-leadership are useful in promoting a state of self-concordance within individuals thereby increasing self-efficacy creativity and job/task performance within organizations.

As our model is based on somewhat abstract theoretical mechanisms and proposed relationships it may be useful to discuss effects shown in our model in the context of a real-world example in order to establish its practicality. Most people who work in the university environment have likely been required to participate in various training sessions (often virtually) in order to adhere to university or governmental policies. For instance many academic researchers have participated in human subject research training for their Institutional Review Board (IRB) in addition to training for travel and research expense reports as well as multiple others (e.g. Title IX harassment and abuse active shooter training etc.). As training is required and in some cases not especially intrinsically interesting motivation to complete the training modules is sometimes lacking. However what if these training modules made use of gamification strategies and systems to increase user motivation and engagement? If a bundle of these gamification elements (points themes avatars and choices) were built into these training modules then that should according to our propositions increase self-management strategies and natural rewarding states for individuals participating in this training. If these two aspects of self-leadership interactively create a feeling of self-concordance for individuals (—this training is important to me and in alignment with my values!) then it should lead to better training outcomes for these modules (increased self-efficacy and training performance). For instance if the IRB training was themed so that the trainees were participants in a poorly designed study and could gain points by correcting the researcher would that make it more engaging and interesting? We suggest that it would and that trainees would be motivated to gain these points and interact with the theme. Furthermore participants could be given options for an avatar or character they could portray in the scenario and offer choices about paths they could take within the training while still keeping with the learning objectives of the module. Although some of these applications could lengthen the training time it might be enjoyable enough that participants might not notice the extra time spent and if the outcomes of the training were better this extra time and development might be warranted. This research contributes to the gamification literature by offering a closer look at one possible underlying mechanism through which game elements can increase motivation and other valued outcomes. The gamification literature generally suffers from a lack of theoretical development. Indeed as Landers (2014 p. 753) has

explained —without a theoretical model linking the specific approaches taken by instructional designers to gamify learning with the outcomes of those efforts it will never be clear why these techniques influence outcomes as they do. We hope that the model presented here provides some conceptual clarity regarding how and why gamification elements influence outcomes. Furthermore our model might help to explain some of the mixed results found in the gamification literature. If gamification elements are tested empirically and in isolation from one another no one element is able to tap into each of the aspects of self-leadership which could explain why they fail. Consequently our theoretical model might provide some insights for future gamification research.

Our paper also contributes to the self-leadership literature by positioning self-management and natural rewards as interactive mediators between the two potentially important constructs of gamification and self-concordance. As mentioned earlier self-leadership is often studied as an antecedent to individual and organizational outcomes. We depart from that norm by positioning self-leadership as a mediating mechanism that can help us better understand the effects of organizational practices. Interestingly in so doing we reframe the current discussion of self-leadership beyond self-leadership as simply the application of prescriptive strategies and toward self-leadership as a more nuanced and higher-level self-influence process (cf. Manz 1986 2015).

Still there are some limitations within this current research that must be discussed. The most salient limitation comes from the issue of how the linkages between gamification elements and self-leadership were derived. Though we offer some logical and theoretical explanations for why we propose these various relationships these are currently without any empirical support. Furthermore other gamification or self-leadership researchers may find linkages where we did not or may argue that some of these relationships are thin or perhaps non-existent. We have focused on linkages we consider to be most supported by our understanding of these constructs. Future researchers may improve upon this model and offer different linkages based on their own understanding.

This research offers a conceptual model of proposed relationships that represents an important first step toward understanding these potentially important constructs and the relationships between them. Therefore we suggest that this paper provides ample opportunities for future research based on this model. For instance future researchers might consider testing these relationships empirically along with the ideas we presented about bundling the various game elements. Furthermore it would be useful to know if certain bundles of these game elements work better than others and in what situations. Empirical testing could involve a wide variety of contexts so that practitioners might know which bundles should be used in job or system design. For instance do badge systems work best in employee development contexts but not as well in performance evaluations? Future researchers could also examine the usefulness of this model when considering the various boundary conditions that may exist for the proposed relationships. For example there are likely many dispositional moderators that could affect these relationships or even create inverse relationships to those proposed. If for instance an individual is opposed to games and game-like environments they might actually act out against any system that incorporates them. Instead of creating self-concordance it might have the opposite effect. Scholars should investigate such issues and may find them to be fruitful avenues of research.

In conclusion if organizations are using gamification systems and practices more in the workplace setting then as researchers we should try to understand the results and why these game elements work (or do not work). If the outcomes for these systems are generally positive and organizations continue to use them based solely on the results we run the risk of dustbowl empiricism or continuing without the guidance and understanding that comes from a theoretically sound practice. It is incumbent on us as researchers to do this work and understand why we see the results we do in the work environment. We hope this article serves as one such step towards that ultimate goal.

#### **Conflicts of Interest:**

All authors declare that they have no conflict of interest.

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