

**T.C.**  
**ISTANBUL AYDIN UNIVERSITY**  
**INSTITUTE OF GRADUATE STUDIES**



**STUDYING THE MEDIATING EFFECT OF GAMIFICATION ON THE  
IMPACT OF PSYCHOLOGICAL CAPITAL ON EMPLOYEES'  
CREATIVITY IN BAHRAIN**

**MASTER'S THESIS**

**SARA EMAD EL-DIN AHMED ALY**

**Department of Business**  
**Business Management Program**

**TEMMUZ, 2021**

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Business Management Program**

**Thesis Advisor: Dr. Öğr. Üyesi Vedat ULUSOY**

**TEMMUZ,, 2021**

**ONAY FORMU**

## **DECLARATION**

I hereby declare with respect that the study “Studying the Mediating Effect Of Gamification On The Impact Of Psychological Capital On Employees’ Creativity In Bahrain”, which I submitted as a Master thesis, is written without any assistance in violation of scientific ethics and traditions in all the processes from the Project phase to the conclusion of the thesis and that the works I have benefited are from those shown in the Bibliography. (.../.../20...)

**SARA EMAD EL-DIN AHMED ALY**

## **FOREWORD**

I express my very profound gratitude to my husband “ Muhammed Khairt”, and my parents for providing me with unfailing support and encouragement. In addition to my thanks and appreciation to my esteemed professors at Istanbul Aydin University, as they had a very great merit in my ability to understand the subject and be able to professionally apply in my thesis. Then, I want to thank my friends for their continuous help and encouragement. Also, I acknowledge the wonderful part played by my supervisor Dr. Vedat ULUSOY whose support, encouragement, and invaluable guidance made the completion of this work possible.

**May, 2021**

**SARA EMAD EL-DIN AHMED ALY**

## TABLE OF CONTENT

	<u>Page</u>
<b>FOREWORD</b> .....	<b>ii</b>
<b>TABLE OF CONTENT</b> .....	<b>iii</b>
<b>LIST OF FIGURES</b> .....	<b>vi</b>
<b>LIST OF TABLES</b> .....	<b>vii</b>
<b>ABSTRACT</b> .....	<b>viii</b>
<b>ÖZET</b> .....	<b>ix</b>
<b>1. INTRODUCTION</b> .....	<b>1</b>
1.1 Background of Study.....	1
1.2 Problem Statement .....	2
1.3 General objective.....	3
1.4 Specific objective .....	3
1.5 Research Questions .....	3
1.6 Significance .....	4
1.7 Variables Definition .....	5
1.7.1 Gamification .....	5
1.7.2 Psychological capital.....	5
1.7.3 Employees' creativity .....	6
<b>2. LITERATURE REVIEW</b> .....	<b>7</b>
2.1 Gamification.....	7
2.1.1 Motivation psychology.....	8
2.1.1.1 Cognitive dissonance .....	11
2.1.1.2 The natural reward (Dopamine).....	12
2.1.1.3 What naturally motivates us?.....	12
2.1.1.4 Intrinsic and extrinsic motivation.....	13
2.1.1.5 Motivating with status.....	14
2.1.1.6 Giving feedback.....	15
2.1.1.7 Creating rules .....	16
2.1.1.8 Stepping stones .....	16
2.1.1.9 Creating Meanings.....	16
So, meaning comes from stories, but we have to allow the story to take our brain somewhere because when we're taken into that state of consciousness, we can feel pain and we can feel joyous.....	17
2.1.1.10 Masters of contributing .....	17
2.1.2 Gamification and motivation from psychological perspective .....	17
2.1.3 Gamification and games.....	21
2.1.4 Game elements.....	21
2.1.5 Employees' Motivation .....	23
2.1.6 Gamification at the workplace .....	25
2.1.7 The effects of Gamification at work .....	26
2.1.8 Gamification and learning.....	27
2.2 Psychological Capital.....	33

2.2.1 Optimism.....	34
2.2.2 Self-Efficacy .....	35
2.2.3 Hope .....	35
2.2.4 Resilience .....	35
2.2.5 The relationship between Psychological capital and performance .....	36
2.2.6 Psychological capital and motivation .....	36
2.2.7 How to work on psychological capital?.....	37
2.2.8 Psychological capital’s development .....	37
2.3 Creativity .....	38
2.3.1 Creativity at the Organizational level .....	40
2.3.2 Employees Creativity .....	43
2.3.3 Creativity and optimism.....	44
2.3.4 The effects of creative contributions.....	46
2.3.5 The impornatce of creativity .....	47
2.3.6 Characteristics of Creativity.....	48
2.3.7 Factors on creatitivty.....	48
2.3.8 The differences between Innovation and Creativity .....	49
2.4 Habitica .....	50
2.5 Conceptual framework .....	51
<b>3. RESEARCH METHODLOGY AND DESIGN.....</b>	<b>53</b>
3.1 Overview .....	53
3.2 Research Design .....	53
3.3 Population and sampling .....	54
3.4 Tools & Measures for collecting the Data .....	54
3.5 Administration of questionnaire.....	55
3.6 Data analysis .....	55
<b>4. ANAYSIS AND FINDINGS .....</b>	<b>56</b>
4.1 Frequency Analysis and Sample Characteristics: .....	56
4.2 Factor Analysis.....	57
4.2.1 Factor Analysis of Psychological Capital for (Employees who are using Habitica):.....	57
4.2.2 Factor Analysis of Psychological Capital for (Employees who are NOT using Habitica): .....	58
4.2.3 Factor Analysis on Creativity Variables for (employees who are using Habitica):.....	60
4.2.4 Factor Analysis on Creativity Variables for (employees who are NOT unisg Habitica): .....	61
4.3 Reliability findings .....	62
4.4 Descriptive analysis: .....	62
4.5 Correlation analysis:.....	63
4.6 Regression analysis: .....	63
4.7 Mann-Whitney test.....	65
4.8 Hypotheses testing.....	66
<b>5. DISCUSSION AND CONCLUSION .....</b>	<b>67</b>
5.1 Conclusion.....	67
5.2 Limitations and recommendations for future studies .....	69
5.3 Recommendations for managers .....	70
<b>REFERENCES .....</b>	<b>71</b>
<b>APPENDIX .....</b>	<b>83</b>
<b>RESUME.....</b>	<b>88</b>





## LIST OF FIGURES

	<u>Page</u>
<b>Figure 2.1:</b> Maslow's Hierarchy of Needs .....	13
<b>Figure 2.2:</b> Screenshots from Habitica.....	51
<b>Figure 2.3:</b> Conceptual framework .....	52

## LIST OF TABLES

	<u>Page</u>
<b>Table 2.1:</b> The response scale .....	55
<b>Table 4.1:</b> Sample characteristics.....	56
<b>Table 4.2:</b> KMO and Bartlett's Test 1.....	57
<b>Table 4.3:</b> Factor loadings of psychological capital items (DATASET1).....	58
<b>Table 4.4:</b> KMO and Bartlett's test 2.....	58
<b>Table 4.5:</b> Factor loadings of psychological capital items (DATASET2).....	59
<b>Table 4.6:</b> KMO and Bartlett's Test 3.....	60
<b>Table 4.7:</b> Factor loadings of Creativity items (DATASET1).....	60
<b>Table 4.8:</b> KMO and Bartlett's Test 4.....	61
<b>Table 4.9:</b> Factor loadings of Creativity items (DATASET2).....	61
<b>Table 4.10:</b> Reliability analysis.....	62
<b>Table 4.11:</b> displays the reliability statistics for Dataset1:.....	62
<b>Table 4.12:</b> displays Reliability Test on Dataset2:.....	62
<b>Table 4.13:</b> Descriptive statistics for psychological capital with four dimensions and creativity.....	63
<b>Table 4.14:</b> Correlations.....	63
<b>Table 4.15:</b> Variables Entered/ Removed .....	64
<b>Table 4.16:</b> Models' summary .....	64
<b>Table 4.17:</b> Rank values for the factors.....	65
<b>Table 4.18:</b> Test statistics.....	66
<b>Table 4.19:</b> Hypotheses testing findings .....	66

# STUDYING THE MEDIATING EFFECT OF GAMIFICATION ON THE IMPACT OF PSYCHOLOGICAL CAPITAL ON EMPLOYEES' CREATIVITY IN BAHRAIN

## ABSTRACT

For more than ten years, the concept of gamification has been discussed and studied in various fields, most notably education and marketing. Despite the abundance of literature aimed at studying gamification, but there is a clear lack of studies related to the strategy of gamification in the field of work or the work environment. In this study the relationship between psychological capital and employees' creativity under the mediating effect of gamification was investigated. All of the research data were obtained from 115 employees who used the Habitica application for at least 2 weeks in different companies between March 2021 and April 2021 in the Kingdom of Bahrain, and 122 employees who didn't use it at all. SSPS and SmartPLS statistical analysis programs were used to measure and compare psychological capital, employees' creativity and the relationship between them among the total number of responses, which was 237. As a result, it has been determined that gamification has a significant and positive effect on both psychological capital and employees' creativity. In addition, it has been determined that gamification has a positive mediating effect on the relationship between psychological capital and employees' creativity. Along with the practical applications of the research, recommendations for future research are discussed in the study.

**Keywords:** *Gamification, Psychological Capital, Employees' Creativity*

# ÇALIŞANLARIN YARATICILIĞI VE PSİKOLOJİK SERMAYESİ ÜZERİNDE OYUNLAŞTIRMANIN ARACI ETKİSİ: BAHREYN'DE BİR UYGULAMA

## ÖZET

On yıldan fazla bir süredir oyunlaştırma kavramı, başta eğitim ve pazarlama olmak üzere çeşitli alanlarda tartışılmış ve incelenmiştir. Oyunlaştırmayı incelemeyi amaçlayan literatürün bolluğuna rağmen, çalışma alanında veya çalışma ortamında oyunlaştırma stratejisine ilişkin açık bir çalışma eksikliği olduğu tespit edilmiştir. Yapılan bu çalışma ile çalışanların psikolojik sermayesi ile oyunlaştırmanın çalışanın yaratıcılığı üzerine etkisi araştırılmıştır. Ayrıca çalışanların psikolojik sermayesi ile çalışanın yaratıcılığı üzerinde oyunlaştırmanın aracılık etkisi bakılarak literatüre katkı sunulmuştur.

Araştırma verileri tamamı Bahreyn Krallığı'nda Mart 2021 ile Nisan 2020 arasında anket yöntemiyle farklı şirketlerde habitica uygulamasını en az 2 hafta kullanan 115 çalışan ve hiç kullanmayan 122 çalışandan elde edildi. 237 olan toplam yanıt sayısı içinden psikolojik sermaye, çalışanların yaratıcılığı ve aralarındaki ilişki ölçülerek karşılaştırılması için SSPS ve SmartPLS istatistiksel analiz programları kullanıldı.

Sonuç olarak oyunlaştırmanın hem psikolojik sermaye hem de çalışanların yaratıcılığı üzerinde anlamlı ve olumlu bir etkiye sahip olduğu tespit edilmiştir. Ayrıca oyunlaştırmanın psikolojik sermaye ile çalışanların yaratıcılığı arasındaki ilişkide olumlu aracılık etkisi olduğu tespit edilmiştir. Araştırmanın pratik uygulamalarının yanı sıra, çalışmada gelecekteki araştırmalar için önerilerde tartışılmıştır.

**Anahtar kelimeler:** Oyunlaştırma, Psikolojik Sermaye, Çalışanların Yaratıcılığı

## **1. INTRODUCTION**

This chapter is going to discuss the background of the study, also showing an examination of the effect of gamification on the relationship between occupational psychological capital and employees ingenuity in Bahrain. Moreover, it is going to discuss the statement of the problem, questions of the research, the main objective of the study, the importance or significance of the study, the purview of the study, and the circumspection of the study.

### **1.1 Background of Study**

Today amid the most recent era of globalization and digital transformation which put all the business world in front of a great challenge, to tackle these challenges companies are seeking out recruiting and retaining the talent needed for growth.

Moreover, the focus on human capital as it's one of the key drivers of corporate success and sustained competitive advantage, that's why the HR function has rapidly become irrelevant because if it doesn't modernize its approach to planning for the future needs in the workforce, the most of pathfinding HR organizations cite identifying the future workforce composition as a strategic priority, they are actively shaping tomorrow's workforce and they need to design an employee experience that mirrors the customer experience. Many studies have focused on studying positive psychological capital and the extent of its positive impact on all aspects of the organization, beginning with organizational behavior, job satisfaction, and the overall performance of the organization. Also, many studies have linked positive psychological capital to innovative work behavior, however, still, there is no clear understanding of the behavior of employees especially in the middle east countries. Besides, all the studies that have been done in this field were ignoring the latest trends and techniques that could affect their results.

As employees we are not expected to execute efficiently the task that has given to us, we are expected to bring our creativity and entrepreneur to the door and help the business to innovate, so to be successful as an employee in this new reality we have to engage in the mission of the company and make the good decision every day to follow this mission, according to the latest studies about employees' engagement in only about 30 % of employees are engaged to work that means they are psychologically committed to the goals of the organization and willing to make a positive contribution and the majority of the employees around 63 % are not engaged that means they are unmotivated and unwilling to contribute and 24 % are actively disengaged they are unhappy and unproductive. Business leaders are taking a look at these alarming numbers and they are willing to try new ways to engage and motivate their employees and gamification just offers us a new way by questions and assumptions of work and play.

## **1.2 Problem Statement**

There is severe pressure on employees in companies to be more creative and this is due to the nature of contemporary organizations with intense competition, which in turn requires constant change in the business environment. Creativity is the intellectual process of creating new and worthwhile ideas (Hon & Lui, 2016). To enhance creativity, which is necessary to keep pace with change and improve performance, we must focus on enhancing the positive psychological capital. Psychological capital offers a fresh perspective on human resource growth, allowing workers to cultivate the critical resources they need in today's demanding workplace. (Avey et al. 2009). Along the same lines, there are many studies aimed at linking the creative behavior of employees with psychological capital. However, there remains a gap in how mechanisms are applied to foster positive psychological capital, as this depends heavily on the extent of employees' engagement. Work engagement is related to the activation and optimal functioning of well-being in the workplace (Christian, Garza, & Slaughter, 2011). The most studies about gamification are focusing on the impact of gamification in education and how to use gamification as a marketing tool to enhance customer loyalty or customer engagement and there are limited

studies regarding studying the impact of gamification in the workplace, even though those studies discussed only the overall impact of gamification, but they didn't link this impact with the employees themselves and their behavior and how will this great power help to enhance their capabilities, because it's more than a technique it's a mindset that has the potential to transform the workplace. Therefore, the problem statement for the thesis is to study the mediating effect of gamification on the relationship between psychological capital and employees' creativity by taking the evidence from different sectors in Bahrain.

### **1.3 General objective**

The research will contribute to the understanding of the employees' thought patterns and ways of working as a result of applying new techniques to motivate them and change their positive behavior towards creativity and innovation.

Moreover, the research will also recommend the strategies of change management to smooth the process to the employees and the role of gamification to recognize the employees who are going beyond their job description.

### **1.4 Specific objective**

- To examine the challenges and opportunities of applying new ways for motivating the employees to the HR management practices.
- To figure out how gamification systems are used in the workplace and to examine how do the employees understand those systems?
- To understand the general knowledge and outlook of gamification in the workplace.
- To recommend new effective strategies to enhance employees' creativity.

### **1.5 Research Questions**

- From the above objectives and the model came the following hypotheses of this research paper which are the following:

- H1: Gamification has a significant impact on psychological capital.  
H2: Gamification has a significant impact on employees' Creativity.  
H3: Psychological Capital is positively associated with employees' Creativity.
- H3a: Resilience is positively associated with employees' Creativity.  
H3b: Hope is positively associated with employees' Creativity.  
H3c: Optimism is positively associated with employees' Creativity. H3d: Self-efficacy is positively associated with employees' Creativity.
- H4: Gamification has a mediating impact on the relationship between psychological capital and employees' Creativity.

## **1.6 Significance**

- This study has a desire of creating the consequence of Gamification on the psychological capital of the employees and their creativity at different types of organizations in Bahrain. Its result will be meaningful in the following ways.
- - The HR managers of the organizations have an exclusive responsibility to motivate the employees to be more creative by using the output of this study to conclude the possible results of the changes.
- - The findings of this research may able to help organizations, the management to apply new ways to gain a competitive advantage in the marketplace.
- - This research can be beneficial for HR managers those who may want to utilize this research as a base for additional research on psychological capital on the employees' creativity.
- - The results of this study also provide worthwhile insights for the understanding of the dimensions of psychological capital altogether and creativity.
- - Future studies should look into the success outcomes of employee's creativity, as well as the mediating impact of gamification on the



relationship between psychological resources and employee's creativity, based on the findings of the study .

## **1.7 Variables Definition**

### **1.7.1 Gamification**

Many believe that the concept of gamification is a newborn, but in reality, gamification is an ancient concept that individuals have experienced consciously or unconsciously, depending on the context (GÜRÇAY, 2015).

According to Oxford Dictionaries, gamification is the application of typical elements of game playing such as, point scoring, competition with others, and rules of play, etc... to other areas of activity, that's why gamification has been applied widely in marketing, mainly used as an online marketing technique to encourage engagement with a product or service. Also, recently Gamification has been used very widely in learning environments, as it is a motivational tool and also helps effectively to increase the students' engagement and the resulting learning outcomes.

Mollick and Rothbard (2014) define gamification as introducing elements from games into the work environment with the purpose of improving employees' effective experiences.

Also, in 2013 Brigham & McCormick referred to the concept of gamification as integrating the characteristics of play into everyday work to work to make it more enjoyable and engaging.

### **1.7.2 Psychological capital**

Psychological capital is the positive ability of employees and it's characterized by several basic factors, including confidence, focus on goal, success, and rebound from problems (Luthans, 2007).

Psychological capital primarily consists of hope, optimism, self-efficacy, and resilience. Snyder in 2002 defined hope as the one's ability to have direction toward desired goals and motivation based on a sense of success. According to (Seligman 1998), optimism is a characteristic of the individual that describes positive matters concerning distinct, permanent, and comprehensive causes and

negative issues with external, short-term, and specific situations. Bandura in 2000 defined self-efficacy as the feeling of being able to do the actions necessary to achieve hypothetical conditions. And when the person can reflect positively, especially in a difficult situation, that is the best definition of resilience (Luthans, 2002).

### **1.7.3 Employees' creativity**

According to (Renee Baptiste, 2008), Creativity in general and in particular employees' creativity is the innovative skills of the employees used to help their organizations gain a competitive advantage in the market. It was also defined later by Choi, Anderson, and Veillette in 2009, as focusing on producing new and unique ideas that can help organizations gain a competitive advantage in the market.

## **2. LITERATURE REVIEW**

This chapter pays attention to the existing theories and their related materials. Theories that are covered in this chapter include gamification, motivation, engagement, psychological capital, and employee creativity. Moreover, the empirical relationship between psychological capital and employees' creativity has been discussed.

### **2.1 Gamification**

Gamification and games share many characteristics. For instance, we can say that gamification provides us with a fun activity to do, also it has rules and levels that we need to follow (Bohyun Kim, 2015). Gamification is the approach that has been increasingly used recently to engage users and is also used in the process of changing behavior. It is mainly, as we mentioned earlier, that it refers to the use of elements of games such as points, challenges, and surprises in many other non-game contexts (Nurmi et al, 2020).

Organizational researchers have noted the use of games at work since the 1930s, but evidence suggests that workplace games may have appeared much earlier and were used to motivate workers in ancient Egypt (Edery & Mollick, 2009).

The concept of gamification is used in various fields of knowledge and by many authors, for example, marketing, psychology, education, tourism, and even public policy. Despite the different strategies and applications used in each field, the goal remains one of using gamification, which is to stimulate and engage users in activities in an enjoyable way. It is a way to change behavior (Washington et al, 2019). Based on this, it becomes clear to us the importance of understanding the concept of gamification well as it contributes to how to determine the appropriate application and use it by the users to be motivated or engaged and interact to create the value to be achieved. Therefore, before talking about different examples of the applications of gamification in various

fields, we must first address to talk about motivation, or rather motivation psychology.

### **2.1.1 Motivation psychology**

According to (Cook & Artino, 2016) motivation is "the process by which goal-oriented activities are initiated and sustained." Besides, the more stimulating the activity, the longer an individual stays with him, the more likely he will be able to sustain it and display a motivation to finish it. Teachers are qualified to use different teaching techniques in their classrooms based on different motivational theories, so this perspective is commonly used in education.

In the 1950s, BF Skinner investigated motivation and learning through a behavior lens; this hypothesis is known as Skinner (1957/2012) as the behavioral theory "practical".

We're talking about behavioral adjustment as a method of learning when we talk about operant conditioning. This stands in stark contrast to pavlov's dogs' motivation and response theories. Since the theory at hand has little to do with programmed responses. Furthermore, the behavior is influenced by the environment and guided by the effects and reinforcements that the species obtain during the behavior's execution. Skinner (1957/2012) addressed how humans have evolved in response to external influences. Positive reinforcers are often used to demonstrate that the learner must continue to experience negative outcomes or negative consequences, which encourages the learner to avoid or improve his or her actions. Skinner recommends caution when dealing with reinforcers in this context. Teachers frequently seek to ensure that the praises they desire, as well the appropriate praises, are reinforced. Skinner concentrated on a few key topics to hold the student's attention. He identified several specific points for an effective classroom, including First, to feel successful, the program must be at the student level. Second, notes are needed to understand them. Third, the chapter is running on the business body plus a focus on customer acquisition. Skinner also added that the classrooms should be decorated and arranged to attract students while taking into account the use of comfortable chairs and good lighting.

Knowing that the motivational theory has advanced in recognition that the learner thinks about external influences and must also analyze them before changing the behavior. As a result, Pandora expands on this by stating that our inner debate, which tells us what we consider to be real, has an impact on our actions. Since people learn from and describe their behavior based on the actions of others, Albert Bandura (1986) referred to motivation and learning as a social cognitive construct. It is also possible to derive the motivation to take action to obtain rewards or punishments it incurs. It's also worth noting that something other than an individual's behavior affects their understanding of their ability to accomplish a task. Many who believe they are incapable of completing the mission are less likely to attempt. This condition is referred to by Bandura as "perceived self-incompetence". He wrote it on this foundation and developed unique instructional activities based on it.

Mastery modeling is viewed and visualized as a successful technique for improving proficiency (Bandura & Wood 1989). These are made up of three essential elements: (1) effective learning skills, which include appropriate actions and skills for performance, (2) practice aimed at mastering learned skills, which includes taking instructional notes as part of the learning process, and (3) turn knowledge into success and be self-directed. The more basic enough skills, the greater the percentage of this occurring, to be considered achievable.

Dr. James Schreiber (2016) investigated the use of motivational theories in the classroom. His various writings and stimulating speaking appearance that share the ideas of his motivational studies have made him well-known. Dr. Schreiber emphasized the importance of teachers comprehending the distinctions between incentives and benefits. Motivation 101 (2016) by Schreiber's presents many practical examples that illustrate an innate human desire. Schreiber examines Skinner's philosophy and how it can be extended to students, as well as how they can improve the effectiveness of incentives. By contrast, rewards are positive feedback based on the belief that timing is an important factor. As a result, the incentive must be immediate in order to strengthen the behavior. As a result, rewards are used less often to achieve more difficult and long-term behaviour. Based on all of the above, we may conclude that deciding what

would inspire students is critical. If bonuses and prizes are too straightforward, for example, students can stop trying their hardest and settle for only getting enough of the reward. For each student to be inspired, there must be a combination in challenge or an independent solution.

Likewise, Praise, according to Schreiber (2016), maybe a strong motivator. However, caution is essential at this stage, especially for teachers, because and our students are unique. Some people are inspired by affirmation from others, while some want to do it alone. Sometimes a student may misunderstand a positive teacher's praise. Students, for example, may interpret a constructive observation about their job efforts as implying that they are not intelligent enough to comprehend it, but at least they try. As a result, Schreiber recommends that teachers continue to compliment pupils, but emphasize success in particular, so that students are aware of the consequences on not doing so. He also indicated and cautioned against a warning presented in the 1970s and 1980s where this research was against the use of external rewards for motivation Schreiber (2016) and added that reinforcing tasks that are already performed could lead to discontinuation if students focus on rewards.

Another important thing is to play with the top-level, as he sees

Students interpret the task as more challenging or stressful, especially if there is an potential reward that they do not obtain and if a distinction is made between being less stressful in the case of being personally tempted to complete the job. As a result, Schreiber concentrated on self-motivation. As for the internal motive, we can say that it is the side that supports our actions. To be able to transcend the external forces of rewards and benefits, this is necessary. According to research, as we encounter obstacles and favor what we do other things, we are more likely to engage in a positive, long-term task.

As a result, Schreiber (2016) advised teachers to concentrate on what they believe to be the greatest impetus for getting the most out of their students. Finally, Schreiber (2016) encourages his audience to recognize that extrinsic motivation encouragement does not always work. So, to bring out the best of all of their pupils, teaching strategies must be mindful of these ideas and attempt to incorporate them into a cohesive whole. Motivation is a commonly used and widely accepted concept (Kessler E.H., 2010), but it is still little understood.

There are many definitions of the term motivation, but all of them are deficient in one way or another and lack many basic factors that will help to understand this term in a deeper way and the ability to use it in the right way in the appropriate place. Motivation is more than just a term or a concept, it is a psychology and I always see it related in one way or another to the engagement, or the correct sense of the art of engagement. This art could be applied in any field and to anyone, those could be students, work team, customers, or even it could just be yourself.

### **2.1.1.1 Cognitive dissonance**

There is something called Cognitive dissonance, Cognitive dissonance can be defined as opposing ideas at the same time, causing a state of psychological discomfort for the individual, and despite that cognitive dissonance acts as a motivational force seeking to reduce this discomfort (Atingdui N,2011). We have always known that our behavior reflects our beliefs, but in 1959 after an experiment had been done by Festinger and Carl Smith, they found that our beliefs are affected by our behaviors because we act in a certain way, we will think that we act like this for a reason. This experiment has been done several times, and it's come to prove that actually, we don't know what we want in a future way. Get told sometimes and sometimes we get distracted by things, but our opinions of what we would like within the future on exactly correct and this works both ways. The way that our memories work is that we connect all the different sensory impulses that we have at the time, the same way we interpret the world from day-to-day life anyway, but in our memory, with more likely to get it wrong, and it's more likely to be different to our experience of real life right now. In summary, it is stated that sometimes our actions are evidence of our beliefs, but sometimes our beliefs may justify our actions (Aronson, E, 1997). So, if you are trying to buy motivation you should not risk the possibility of diminishing long-term motivation and it is better to cause cognitive upsets that cause the person to just decide they may be like to subject all along.

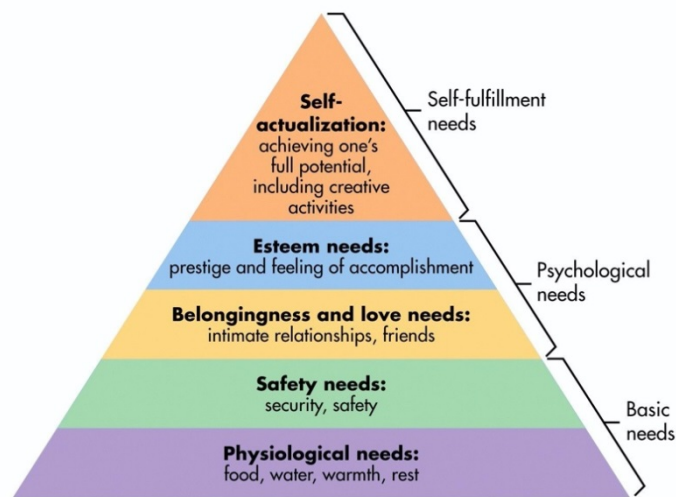
### **2.1.1.2 The natural reward (Dopamine)**

Dopamine is this chemical that we have released into our brains to tell us that we have achieved our goals. It keeps us moving towards goals. So, we are naturally rewarded with the chemical dopamine for achieving goals that help keep us strong and alive. Also, the variety does play a special role when it comes to motivation, which it means that people will only do this if they aren't already getting regular dopamine releases from achieving natural goals that enhance their life (Smith G.P, 2004).

### **2.1.1.3 What naturally motivates us?**

Two types of reinforcers can motivate us and they are primary reinforcers and conditional reinforcers. Primary reinforcers what is that nature gives us a dopamine release, which, without any manipulation, the world will still get dopamine releases for doing these things. Maslow and Maslow created the hierarchy of needs, which is a pyramid on each layer of the pyramid has a different set of needs, and we need to accomplish those things before we can go up to the next level (Acevedo, 2018). As it's shown in the diagram below, the very bottom level is our physiological needs things like food and water, the things that we need to survive. But the next level after that is safety. This is where you want security like a permanent job or a pension, these things that tell us we will have food and water in the future. The next layer above that is love and belonging. This is where we need a community with which we are connected. From that, the next they are above that is self-esteem. The next layer is called Esteem, Maslow split this into halves. You have got your basic esteem, which is like status and your reputation. This is where people approve of you, and the next they are up from that is your self-esteem. This is where you approve of yourself and you feel comfortable in yourself, that is self-actualization, this is different for everyone. These are very personal to ourselves, and as long as it's not about the status, as long as we might still roll in the hay if people weren't watching, then it's not an esteem thing. It's this thing inside of ourselves where we want to be the best we can. It doesn't matter so much if we are better than other people. It managed that we are achieving all that we can achieve.





**Figure 2.1:** Maslow's Hierarchy of Needs

#### 2.1.1.4 Intrinsic and extrinsic motivation

When we look closely at those needs, we will find that some of them very much outside of ourselves, they are very physical in the real world. Like for example, food, water, and even job security, but also the lower level of esteem, that status, and that approval all of the other ones above that the self-esteem visits within ourselves. These are internal, that's why we have to make a defined split into two types of rewards intrinsic and extrinsic rewards. Extrinsic rewards are the ones out there in the real world, while intrinsic rewards are inside you (Levesque R.J.R, 2018). The point here that we need to focus on intrinsic rewards, things like contributing to the community, personal growth, deep human relations, and less about things like money, fame, and approval. This is because some of those extrinsic rewards have been proven to get in the way and distract us from these more important intrinsic rewards.

The intrinsic rewards we will keep happily working towards with no damaging detrimental effects to our health or without us damaging any of our other goals. There is a state known as flow. Now the thing with the flow is it's a state that we get into where time seems to stand still and we have all these creative ideas and we just seem to naturally enjoy and be motivated to try to do the items we do and be oblivious to all or any those extrinsic things around us and flow is that the ideal hyper state that we want to be ready to get ourselves and people into, and that we can't give people flow. So, if we want to motivate people, we can't just give them that state, but we can create an environment for them to be

able to get into it so we can create communities. We can create meaning, and it'll allow people to urge into the flow. But once we create things like status on, we create things like money, it's detrimental to people having the ability to urge into flow air. Dr. Daniel H. Pink, author of drive, claims that individuals who are driven by autonomy and intrinsic motivation have higher self-esteem, stronger interpersonal relationships, and overall happiness than those that are driven by extrinsic motivation. Also, MIT it's a college in the united states did an experiment where they gave people 3 different levels of rewards for doing a task and they found the more analytically the task the more involved some kind of creativity and daily there were able to achieve and get in the flow. And they found that the more they paid people the lowest of results. (Legault L, 2020). To sum it up we can say that, extrinsic motivators are short-term and unsustainable, while intrinsic motivators are much more powerful. "Human beings have an inherent inner desire to be independent, self-determining, and linked to at least one another," Daniel H. Pink, author of drive, said "and when that drive is liberated, people do more and enjoy richer lives.". Hence, we will be focusing on the four big intrinsic motivators community, autonomy, meaning, and mastery. Community, such as hang out with friends, attend parties

Meaning, this is why thousands of people contribute to Wikipedia without getting paid they just have the sense that we should share this information and this knowledge and we should build on this thing.

Mastery means, continuously improving and saying that you are improving this is why people spend hours to learn how to play the piano beautifully without a desire to be a famous pianist they just want to improve themselves

Autonomy is the ability to make some kind of choice. This is the liberty that we all so desperately crave.

### **2.1.1.5 Motivating with status**

So, let's imagine that you make millions of dollars, or people think you look good, then you get a dopamine release for your improved status but in fact, this is will be temporary. And as we talked about before it's the hedonic treadmill, which means that once you have the sports car that you have been always dreaming about it, you need a private jet to urge subsequent boost from that

method. So, it's very flawed. However, when we look at some of the times that people have used status, and it's been quite effective because out of all the extrinsic rewards, status is the most powerful because it's high up. And it's something that a lot of people perhaps don't have as much access to food and water. So, it's powerful, but it's also the easiest for you to supply (Proudfoot & C. Kay, 2014). The best example of status is Facebook's like button. There are certain tricks we can use on Facebook to get more likes and more comments, and this increases our status.

So, status can work as a motivator, but perhaps not so much as an engager. When status does successfully engage people, there is normally an intrinsic motivate underneath.

#### **2.1.1.6 Giving feedback**

According to current research, input that is provided more often and in greater depth is more likely to be accurate (Earhardt-Martinez et al.2010; Darby,2006). We can get feedback in lots of different ways; the point is to get something that tells you that you are improving and it makes you want to carry on the same way. Providing information intended to inspire the recipient to partake in the action will also increase the influence of feedback (Christine L. Cargo et al, 2020). The best way to describe this is the difficulty level goes up in computer games as we know that we are playing on a whole new level. Back to flow that we have mentioned before, flow is how is the engagement in the enjoyment we feel when we are on the verge of our skill level where if it was too simple, would be bored and if it was too hard, would be stressed and we wouldn't be able to cope with it. But we feel flow when it's right there on our skill level. This is the exact level that we are comfortable with, and this is very easy to engineer this environment with a computer game. But the more we can try and engineer it in real life, the better. There is an app called Running out, it tells you the speed that you were running out and it compares it to the day before, this app uses instant feedback to give the feeling of improvement and this is the motivation that will keep others going. So, the more we can encourage people with these instant feedbacks to say you are improving, this is the level your acts, and as long as people carry on doing things, there are always going to be improving, the better it will be to motivate them into engaging them. So, it's

never too hard for the participant on never too easy, we can keep them in a flow state.

#### **2.1.1.7 Creating rules**

When we are identifying goals for any task, we need to create specific rules around it. There needs to be the knowledge that there is a goal that you are working towards. The boundaries are important. Because boundaries make us more creative, and it gives us more space to really enjoy the task and to come up with much more creative outcomes and rules essentially help engage us.

#### **2.1.1.8 Stepping stones**

Progress bar like that one in Linked in is the best to describe the meaning of stepping stones, they found that if they put little progress bar at the side and they showed incomplete, it vastly increased the number of people who would go in there and finish completing their profile because they hated to see something incomplete in there. However, to make sure that it works you have to split these tasks down into achievable little reward loops. Ideally, at the end of each loop, there should be some kind of feedback.

#### **2.1.1.9 Creating Meanings**

There is a recent study concludes that motivating by creating meaning has positive effects on work engagement (Kunie et al., 2017). I have been working as a teacher for 5 years, and one of the biggest achievements I made which really helped to improve my classes was that I realized that when students are having fun, they are more motivated and engaged. So, when we are having fun, when we are enjoying ourselves, we are more likely to achieve our goals. This because of that. When our brains can think of a more positive way, we could be using our time, they will stop contributing. Even if you are physically still in this position, your brain will go to say I'm not dealing with this and it will back down and you will shut down mentally as a person, so the point here that we need to believe in the thing that we are trying to master for us to be able to master it, this is exactly about the meaning and how we create meaning and how meaning affects us.

When we talk about the meaning we have to talk about inspiring, when people have meaning in their lives, they are happier and more productive. According to

(Geldenhuis et al, 2014) employees' perception of psychological meaningfulness is positively related to work engagement (Md Karim & Tan Fee, 2021).

To be able to create meaning and inspire others you need to create a story. The story is actually like having your brain hijacked you need to be a lot of trusts built up before we will be taken on the story by some.

So, meaning comes from stories, but we have to allow the story to take our brain somewhere because when we're taken into that state of consciousness, we can feel pain and we can feel joyous.

There is something called the story art, this is how we can think of stories as having a beginning a middle, and an end, and when you are creating a story, you need to be able to relate it back to the person who is listening, as they are always going to interpret the story a little different or how you told it. But ultimately you are relating it back to the listener. Because it's really about them.

#### **2.1.1.10 Masters of contributing**

There are companies have taken to do anything called a hack day, where they let any employees, they want for the whole day just taken idea and run with it. Then they have to present back what they did at the end of the day. This allows people to create their own ideas and engages them also or throughout the whole year, because of this feeling that they were important for the company and someone is listening to their inputs. "One of the sincerest levels of appreciation is genuinely listening to what someone has to say," Bryant H. McGill said.

#### **2.1.2 Gamification and motivation from psychological perspective**

The concept of gamification simply is about making the tasks sound like a game so that the players are more inspired to finish them (Bardwell & Tina, 2019). According to Kapp (2012), that motivation and interest can be increased by focusing on game-based mechanics. Most studies point to gamification as a very effective method of motivation and participation. Some literature has mentioned this effect, but with different names, such as incentives approach or incentive mechanisms, which include badges or points that the user gets after completing the tasks required of him (Anderson et al., 2013).

As previously said, the concept of adapting game elements to a different setting and using them for different purposes is not completely new. Since the same approaches can be used in other schemes, such as loyalty services such as frequent flyer programs or incentive programs from credit card companies, both of these programs follow a somewhat similar approach. However, there is still a clear lack of research and studies that have addressed the motivational effects of gambling, despite the use of gamification in various contexts, and it appears that some applications have positive effects in terms of motivation and learning. On this basis, the concept of gamification was described in addition to defining the game elements used in the gamification game. As a result, the concept of gamification will be presented in the following part, along with its four components.

We can refer to the definition of conceptual gamification as "the use of game design elements in non-game contexts." After checking, we found that there are four important components:

1. The first step is to grasp the meaning of the word "game", which is often used to refer to the following circumstantial elements: a goal to be met; Define the laws that will decide how you will achieve your target. Method of feedback that offers updates on progress toward the goal; Often, attendance is entirely voluntary.
2. The term is often used to differentiate the idea of gaming from serious games, which are entire games designed for non-entertainment purpose. Manipulation, on the other hand, refers to the intentional usage of game features in non-gaming contexts, as previously said.
3. The word "creation" refers to the game's actual design, not to game-based technology or game-related activities in general.
4. As previously said, gamification has a wide range of applications. As a result, the expression "non-game contexts" has been used to define the application area. (Michael Sailer et al, 2013).

In being practical, this definition helps distinguish gambling from other concepts that are relevant to games and provides a basis for investigations.

. Moreover, gamification is not only related to digital media although it is mostly associated with digital technology, in addition to that non-digital perception is also possible.

Motivation is one of the neurological mechanisms involved in the initiation and maintenance of goal-directed activities. According to motivational analysis, there are six major viewpoints that can be applied to gamification: the attribute viewpoint, behavioral learning perspective, cognitive perspective, self-determination perspective, focus perspective, and emotional perspective.

There are also hypotheses in the context of gamification in light of these perspectives:

1. From the perspective of the traits, as it is possible for general categories of motives and needs to be raised by the motivation. Specific traits that are relatively constant over time and environments that have a significant effect on actions are depicted here as inspiration.

One of the most important motives in this perspective is the drive for achievement and the need for belonging and strength. Accordingly, we can derive three motivational mechanisms:

A) If gamification confirms achievement and success, then players who have a strong drive for achievement can be motivated. *Journal of Interactive Design and Architecture - IDX & A*, N.19, 2013, pp. 28-37

B) If the method of gamification for domination or competition is tightened, then players with a strong motivation for strength can be motivated.

C) If gamification confirms membership, then it is likely that players with a strong motivation to belong will be enthusiastic.

2. From a behavioral learning perspective, the basis here is the positive and negative reinforcements that occurred in the past and which in turn affect the future as the motivation results from these reinforcements

Here the motivation is seen as an outcome of past experiences.

3. Motivation is defined from a cognitive perspective as a consequence of target analysis. Expectations, predictions, and assessments are all important internal mechanisms of cognitive theories of motivation.

4. As for the self-determination perspective, the focus is on contextual social conditions as opposed to preventive motivational processes.

5. Perspective of interest refers to individual preferences as well as aspects of the content to be considered. On top of this, motivation results from a person's relationship with the topic of the task or environment. Most of the time this can lead to the person being completely immersed in a task, which is called feeling the flow.

6. The role of emotions in cognitive and motivational processes is the focus of the emotional viewpoint. Nevertheless, it can be affected by educational strategies.

Finally, we can assume that the viewpoints mentioned are not incompatible with the viewpoints on

Motivation and motivational style are two terms that are mostly used interchangeably. Where the focus is solely on various facets. It serves two purposes when it comes to motivational motivating mechanisms: it can be used to investigate the motivational pull of game components, and it can be considered when constructing motivational environments. These concepts from motivational psychology will be applied to gamification in the following sections. (Michael Sailer et al, 2013).

Gamification authors argue that companies, schools, and even governments, use this strategy to motivate people (Bardwell & Tina, 2019). Given Domínguez et al. (2013) where a questionnaire was used on the participants in the use of the site and levels of motivation, the findings clearly confirm an improvement in the user's motivation by using Blackboard and a stronger motivation to learn for an accomplishment system (Domínguez et al., 2013). Likewise, Frith (2014) found when looking at the Foursquare app, Participants communicated and participated in their environments in various ways, and they reported higher levels of motivation and commitment as a result of the app. (Paul Wolff, 2017). Many of the core components of the Self-Determination Theory (SDT), which looks at the relationship between motivation and social context, can be seen in



the gamification genre, such as competing with others, working with others, and making their own choices about matters (Deci & Ryan, 2015).

### **2.1.3 Gamification and games**

According to Kapp (2014), it clarifies the difference between Gamification and Gaming; Explaining that gamification is the use of some elements of the game. As the main idea here is not the game itself, but the goal is to join activities that include the elements of the games such as overcoming the challenge or receiving badges for completing missions or earning points. Hence, the difference is where the games have a beginning and an end, but gamification is the players' realization that they are participating in the in-game activity and at the end, there is a win situation.

Some condemned gamification to failure, and this was due to a misunderstanding of this term, as care must be taken to understand it in a good way, especially when designing a system for gamification, it must be under the correct instructions so that we can guarantee the success of this system and obtain the best results. (Cugelman, 2013).

Kiryakova (2014) summarizes some of the advantages that games have and play an important role in gamification as follows (Al Kahwaji, 2019):

- Users are involved – students, customers, or employees.
- Challenges/tasks that users achieve and develop towards specific goals.
- Points that are collected as a result of carrying out tasks.
- The levels that users rise according to points.
- Badges that help as rewards for completing actions.
- Ranking of users according to their achievements.

### **2.1.4 Game elements**

We have previously referred to a set of features that characterize the games and that play an effective role in the gamification policy, but for further clarification and after reviewing the literature, it was found that there is a set of specific and main game elements. It has been observed that these elements are present in modern video

games and the gamification policy is based primarily on re-employing these elements outside of video games and in all areas of real and practical life (Paul Wolff, 2017).

Among the most common game elements that have been identified through the literature review are:

**Awards or achievement** are primarily digital rewards for completing a task or series of tasks within a system (Chapman & Rich, 2017; Dale, 2014; Dickey, 2007; Hamari et al., 2014; Rapp, 2017; Sailer, Hense, Heinz, & Klevers, 2013, Seaborn & Fels, 2015, Zichermann & Cunningham, 2011).

**Points:** A digital scale is a device that specifies certain behavior. The main goal is to keep track of success in a gamified environment (Chapman & Rich, 2017; Dickey, 2007; Hamari et al., 2014; Maan, 2013; Rapp, 2017; Sailer et al, 2013; Seaborn & Fels, 2015, Zichermann & Cunningham, 2011).

**Badges:** They are similar certificates in that they are issued after performing a mission, but badges are differentiated by the fact that they are permanent, since they are shown repeatedly on the nameplate or in some manner to represent rank on a regular basis. (Chapman & Rich, 2017; Seaborn & Fels, 2015; Deterding et al., 2011; Hamari et al., 2014; Maan, 2013; Zichermann & Cunningham, 2011).

**Progress bars:** it's simply a visual representation of a users' progress as that one at LinkedIn that shows how much did you finish your profile (Chapman & Rich, 2017; Dale, 2014; Dicky, 2007; Hamari et al., 2014; Sailer et al, 2013; Seaborn & Fels, 2015).

**Levels:** Digital standards that convey expertise, skill, or competence in a domain of the system. Where usually, progress in these levels is achieved by accumulating a specified number of points or upon completion of a specific task (Chapman & Rich, 2017; Deterding et al., 2011; Dickey, 2007; Hamari et al., 2014; Maan, 2013; Rapp, 2017; Seaborn & Fels, 2015; Zichermann & Cunningham, 2011).

**Quests:** This involves the role or set of tasks that users complete within the system. As part of a border progression paradigm, these activities often serve as a source of narrative structure. (Blohm & Leimeister, 2013; Chapman & Rich, 2017; Dale, 2014; Dickey, 2007; Rapp, 2017; Sailer et al, 2013; Zichermann & Cunningham, 2011).

**Leaderboards:** It is an ordered list of usernames within a system based on some measure. Its goal is to boost the sense of competition within a gamified system (Chapman & Rich, 2017; Deterding et al., 2011; Hamari et al., 2014; Mann, 2013; Sailer et al, 2013; Seaborn & Fels, 2015; Zichermann & Cunningham, 2011).

**Avatars:** Digital self-representations in a gamified framework (Blohm & Leimeister, 2013; Chapman & Rich, 2017; Deterding et al., 2011; Sailer et al., 2013).

**Rules:** They are the laws that control the application's overall layout as well as the procedures that occur within the system (Chapman & Rich, 2017; Deterding et al., 2011; Maan, 2013; Zichermann & Cunningham, 2011).

**Bosses:** There are challenging stages of challenges that necessitate a lot of work to overcome. (Chapman & Rich, 2017; Hamari et al., 2014; Zichermann & Cunningham, 2011).

**Real-time feedback:** it can be through both audio and visual indicators after reaching a level, or an achievement (Chapman & Rich, 2017; Deterding et al., 2011; Hamari et al., 2014; Zichermann & Cunningham, 2011).

### **2.1.5 Employees' Motivation**

The term motivation is derived from the Latin word *move*, which refers to movement. Motivation is always due to a specific behavior, which means that a person cannot perform any behavior without a motive. Mostly a human impulse arises as awareness or subconsciousness of its own needs. As a result, when determining the motive, we must remember that the motivation or need is an internal disorder, as well as a deficiency or deprivation, that forces the individual to engage in a series of activities (Seyyed Javadin, 2008). Robbins (1999) established another concept of motivation as follows: "Intention for an abundant effort to provide for the organization so that this attempt is pushed to satisfy certain individual needs." When it comes to employee morale, it's important to remember that one of the most fundamental responsibilities of management is to maintain high levels of employee motivation. In other words, the management must guarantee that employees are employed, going to work on a daily basis, and contributing to the company's mission. According to Muhammadzadeh and Mahrouzan (1997), in addition to inspiration, work success is influenced by talent and atmosphere.

Motivation is a systematic process that starts with a desire, lack, or deprivation, and then moves to a requirement, causing tension and leading to act against a goal, where the goal is an action to accomplish the goal, and this is the outcome. This sequence in the process can lead to the fulfillment of needs. Accordingly, the motivations inspire and empower the person to complete a mission or

behave in a certain way. However, as punishment and reinforcement are always considered part of the very strong motives in many of the experiments and studies that have been listed in the motivation, the motive still represents a general demand. In this regard, we can say that money is a tool for giving a reward but it is not the only motivational factor (Syed Javdin, 2008).

Rewards are effective motivation systems for employees, which managers resort to if they want to motivate employees, but the reward must be appropriate, effective, and timely. Some studies refer to the concept of performance enhancement that effective and timely feedback can be seen as a driver for increasing employee productivity (Cook, 2008). According to (Schaufeli, 2004) studies also revealed a direct association between current employee capital, service pay, knowledge sharing, and the level of tension and career burnout in the workplace. The focus is typically on what managers and workers refer to as reward, as well as stressing a special meaning and focusing their action towards those values (Podhame, 2004).

Accordingly, managers should strive to create a suitable organization based on value and use it as a major management target, whether short-term or long-term (Hamill, 2007). Through a review of the literature, it became clear to us that for a change in management to occur, one must not focus on increasing production only, but thinking about how to choose the right people for the success and leadership of the company (Wren, 2005)

Some characteristics are considered legal criteria, including the fairness of the reward and remuneration system to provide for their needs (Carico & Mujtaba, 2008). As the employees always think about how to improve performance and quality as long as companies and managers reward product quality (service) and improve quality fairly and clearly, this leads to better working methods (Mojtaba, 2010).

On this basis comes the task of human resources managers, which is to envision employees in establishing a good relationship between all managers and employees to ensure the success of the organization (Carico & Mujtaba, 2009).

According to (Mojtaba, 2010) as part of a performance improvement strategy, an effective compensation scheme for both workers and suppliers leads to improves organizational quality and productivity. Whereas, performance

management is the best and safest method of evaluation because it is compatible with the activity of the institution and with the views and purposes and their unification.

### **2.1.6 Gamification at the workplace**

As mentioned earlier, evidence indicates that games appeared in the workplace in the past and that they were also used as a motivational tool for workers (Edery & Mollick, 2009). Upon reviewing all the definitions that researchers use for the concept of gamification, we found that they all fit the methods used in the past to motivate workers despite the different nature of games in the workplace over the years, as games are systems in which players participate in an artificial competition (either alone or against players). Others). This is according to specific rules (Salen, 2004; Zimmerman & Salen, 2005). In contrast to previous studies that considered gameplay as a waste of time and especially for management (Roy, 1953; 1954), Burawoy (1979) in his study pointed out the many benefits of games and at the same time very important for management as Burawoy (1979) saw games as an important method. In which management exercises control over workers, Burawoy (1979), based on another positive perspective in which workers are transformed into a side struggle with each other through play, in the form of competition, rather than uniting against management. After Burawoy's research (1979), employees began to search for games in various forms in a variety of settings, whether in the form of contests or classes. And then games were of interest by managers as well, rather than merely tolerating games that developed naturally (Reeves & Read, 2009). This was in the spirit of reducing the intensity and pressure of work and trying to satisfy the employees and make this work more enjoyable. His assumption was based mainly on the motivation principle, which prompted managers to incorporate games into the work environment (Mollick & Rothbard, 2014).

The companies that implement the concept of gamification are divided into two main categories: the first category is services, consumers, and their marketing and loyalty programs, and the second category mainly focuses on employees and trying to motivate them to improve their performance at work (Dale, 2014).

(Deci & Ryan, 1985; Grant, 2008'a) indicates that there is a kind of pleasure that is considered as an internal stimulus, and this type is very important in a

work environment. In addition to the research conducted on the games themselves, I found that the positive effect is very high, especially if the participants engage in a favorite activity for them, and here the pleasure is linked to the positive effect after the game (Przybylski, Weinstein, Murayama, Lynch and Ryan, 2012). After reviewing many pieces of literature, it was revealed that there is a research conducted on AET (Weiss & Cropanzano, 1996) which defines the emotional event as a work event in which the employee has an emotional reaction (Weiss & Cropanzano, 1996; Bash & Fischer, 2000) where the results of this research were completely consistent. With the idea that games at work can improve positive impact and performance. Although the research in AET did not examine games as sources of emotional reactions per se, games by their very nature are designed to trigger emotional events (Mollick & Rothbard, 2014). As we mentioned earlier, we talked about the elements of the game such as rewards, challenges, and the spirit of competition, which must be put in a good and thoughtful way, as it gives the participants a sense that they are constantly achieving success in the world of the game (Coaster, 2004; Von Ann and Dabish, 2006; Ye, 2006; Reeves and Reed, 2009). Moreover, games provide a much greater sense of accomplishment than is possible in a real workplace (Davis, 1959; de Man, 1928; Edery & Mollick, 2009; Schell, 2008). Hence the positive effect of an individual in response to playing the game (Reeves & Read, 2009; McGonigal, 2011).

### **2.1.7 The effects of Gamification at work**

Through a review of previous literature on studying the impact of gamification at work, results were found to be mainly mixed between negative and benefit, with approximately 39 percent of studies showing mixed results (Cramer et al, 2011). The reason to this mixing is due to many factors, including small sample sizes, as well as simple research designs, and from here it appears that there is a gap between practice and research. But if we look closely at modern human resource management practices, we find that they contain, to a very large extent, gamification strategies under other names, including motivation and engagement. However, there have been significant increases in recent years, including efficiency and motivation, in studies on the effect of gamification on the workforce (Hosseini & Haddara,2020) (Warmelink et al., 2020). In addition

to the conclusion from Larson 2020 about corporate learning on some successful applications, (Selleck et al. 2020) states that the staff results have had a positive effect on employee fulfillment and commitment. Despite this, more research is still needed that measures actual results in the same specific organizational contexts. Therefore, we discovered multiple requests for testing by (Cardador et al., 2017; Ferreira et al., 2017; Hamari et al., 2014).

### **2.1.8 Gamification and learning**

There are many theories of learning to gamification and have listed them (Asal & Katoville, 2013) in the form of three main educational topics derived from the constructivist approach: connectivity, experiential learning theory, and inquiry community.

**Connectivism:** This strategy was used in response to technological development, especially in the field of the Internet and digital technologies. (Dunaway, 2011) has indicated that there is an obvious flaw in the traditional constructivist approach, and this has been remedied by sharing knowledge in an exact copy of the web via internet technologies.

**Experiential Learning Theory (ELT):** The focus here is on the learner, and this theory is often used in the field of education, where games and simulations are used to aid understanding. According to Kolb, Passarelli, and Sharma (2014) gamification techniques alone do not teach thought processes.

Through a review of the literature, it was demonstrated that simulations were used to engage students and capture their attention. Kolb et al. (2014).

**Community of Inquiry (CoI):** Shea et al. (2014) to a framework characterized by three axes of social, cognitive, and educational illusion to be measured in an opaque form. After that, a fourth axis was added, which is learning, which revolves around the student himself through open communication. The primary role here focuses on teachers in CoI in general and their role in regulating interactions. Thus, we can say that CoI is partly founded on the principles of constructive learning according to Dewey (Garrison, Anderson, & Archer, 2010). In another study by Garrison et al. (2010), learning theory is described as referring to assessments that are primarily based on problems that have developed from comparisons between synchronous and asynchronous communications.

The design elements for building an inverted classroom environment were linked with the presence of the investigation community as demonstrated by the study of Kim, Kim, Khera, and Getman (2014) and the primary goal was to have more effective interaction especially in online lectures.

There are four main principles of CoI identified by the authors: learner presence, cognitive presence, teacher presence, and social presence. Where social presence corresponds to many aspects of student engagement for retention.

Squire (2011) states that the classification is not clear in educational objectives compared to other types of activity. Moreover, this study uses the definition of Squire (2011) to be more meaningful: an educational digital game is any technological game platform used to teach or enhance learning objectives.

After an overview of the use of games to enhance learning during a literature review, we found that Keys and Wolfe (1990) discussed the early origins of game-based learning in 3000 BC with a game very similar to today's chess game, called chaturanga. The game simulation method was also used in the war exercises in 1664, these exercises were on a large scale represented in the conduct of war maneuvers in the period of the thirties and after the First World War, and after the end of the war, these soldiers returned to civilian life and a business simulation model was applied, and on this basis, we can It is said that the last simulation business game was developed from the military exercises in World War I.

The use of technology had its first share in gamification at the hands of Malone (1981), intending to help to engage in the context of cognitive psychology; Malone's (1981) studies of games like hangman found that adults can build cognitive models based on emotional knowledge. This means how emotions are perceived by people as a matter of great interest from Malone's point of view (1981) and that led to research work in clinical settings with psychology patients.

On the other hand, Iten and Petko (2016) investigated the potential links between learning motivation and learning gains in games through a qualitative exploratory study. The surprise was that expecting fun did not seem to have a theoretical effect on learning, especially in the primary school population. On top of this, however, children expressed a stronger link between expectation of ease and the benefits of education.

According to the literature, it was found that there is a positive effect of serious games on children's mentality and education. There is a study conducted on children,



which gave them a framework for educational precedence, presenting the desire to engage in the activity. The authors also suggest that in this way the contributions are maximized as they are more likely to assist students and teachers in the learning process.

Rosas et al. (2003) mentioned in their study of children that many factors were present which in turn shaped the child's cognitive developmental process that involved games. Hence, it is evident that the missing context in digital games occurred because while involving children, the focus was on educational content rather than student participation.

Regarding the definition of Square (2011), we find that it includes simulations, strengthening exercises for terminology, and mock evaluations, and that happens Within the wider limits of the game window. Therefore, it attracts a wide range of business or managerial interests.

Vaughan (2015) cautions about stakeholder perceptions of using games leading to the conclusion that training is not taken seriously, although it also appears that Vaughan (2015) does not refer to the origins of technological stimulus; But this is likely to be since one of the areas the author may have struggled with was with game terminology understandable as the terminology complexity evolved.

Difficulties inherent in in-game terminology are discussed by Keys and Wolfe (1990), which are the preparation of simulations, functional business games, and managerial accounting games, which are examples of the common terminology associated with learning.

There are qualitative case studies on previous work using digital games. Also, to help students retain information especially in science and mathematics, these studies were built by Clark, Singupta, Brady, Martinez Garza, and Kellingsworth (2015). Clark et al. (2015).

Gee (2007) has also previously indicated that students build knowledge built around concepts that include content and emotional empathy for characters or game situations.

In (2016) Heinrich and Rivera mentioned that interpreting Kolb's (1984) work helped learners participate in activity projects, for example using media presentation in student-created content, and then thinking about learning goals before engaging with learners again.

There is a longitudinal study that was among adults indicating that there were physiological changes that occurred in the structure of the brain of the players, and that was during video game sessions by Cohen et al. (2015), from these physiological changes to strategic development and spatial awareness, as they were compatible with the desire of these participants to play games.

Likewise, Rosser et al. (2007) Physiological changes but this time in coordination between surgeons who played the shooting game.

Both Kühn et al. (2015) and Rosser et al. (2007) note that digital games can be a valid simulation tool.

Results of a clinical trial using nonviolent digital games Ballesteros et al. (2015), which in turn led to improved brain flexibility as evidenced by higher cognitive processes in addition to the recognition of pictures of family members.

The pilot study period was within the three months and on this basis the results recorded by the authors showed that while gains in cognitive processing occurred, most of the participants returned to baseline by the next three-month retest period.

The authors also suggest that for cognitive changes to occur for a long time, potential learners would need to revisit similar games. There is another clinical trial conducted by Ballesteros et al. (2015) as it yielded clinical evidence that older adults gain improvements in memory and pattern recognition through playing digital games. The design of this study was based on criteria to measure episodic memory among the elderly and the researchers found some short-term effects (Toril, Reales, Mayas, and Ballesteros, 2016).

Between 2007 and 2017, it was found that digital learning games in education were discussed in academic circles because of the possibility of learning with an emphasis on interaction. Also, Elliott, Adams, and Brockman (2002) conducted a qualitative case study on digital learning games in a high school classroom, and the results indicated that the games were suffering from cognitive problems in the audience.

According to the authors, it was noted that the difficulty lay in the students' expectations of producing commercial digital games that failed AQUAMoose, the game mentioned in the research, which is to present a sophisticated graphical interface that is comparable.

Another suggestion came after a quantitative study of adults between 18 to 43 years old and that was using an MMORPG (multiplayer online multiplayer role-playing game), as this suggestion implies that adults need a degree of anticipation and social

communication to achieve contact with the game. (Lippert, 2008). Nevertheless, learners who play digital games may have higher expectations of production values than those new to digital games.

Therefore, it is possible that some studies in previous digital game research were flawed due to the interactions of the test subjects as they were combined with a skills-based approach; That is, taking into account the player's skills before not recording the content of studies (Towne, Ericsson, & Sumner, 2014). With the advancement of computer technology, the complexity of many modern digital games increases, and this, in turn, creates a kind of difficulty for researchers in accurately identifying problem areas.

There was an attempt by the authors Towne et al. (2014) to address the problem of the skills approach with the expert performance approach developed by Groot (1978). Accordingly, this method calculated many variables in addition to measuring tasks independently.

Towne et al. (2014) suggested that the successful implementation of digital game simulations must include the creation of an intentional system of practice. Because many schools use a goal system, this goal-based approach to the curriculum may be appropriate as a clear relationship between the two: simulating the game and class goals (Wormeli, 2003, 2006).

Through a review of the literature, it was found that there is a link in using MMORPGs (online multiplayer role-playing games) to successfully teach Spanish to English speakers. Childress and Braswell (2006), who used a Kansas Medical University, second 58, was that Life was able to help students move through simulations to careers by taking on office roles.

Moreover, Trinity University used Second Life to host online games in the classroom, which helped to allow interaction for students, especially with the virtual spaces within the game.

Childress and Braswell (2006) highlight the style of digital play that interacted with most students and helped with interest and learning of concepts.

In a study by Rankin, Guleb, and Goetch (2006), it was discovered that students who were rated for English as a Second Language (ESL) were well connected with MMORPG Everquest and served as a tool to improve their general skills in American English.

There is another study that was conducted at a Western Friday to help students of English as a second language to reach a higher level of understanding, where a role-playing game was used. The results were as follows: an increase of up to 40% due to the NPC (non-player personality) interaction.

The authors also note that there are a small number of messages written by the study group using chat messages and player forums.

(Barnard, Bradley, Hodgeson and Lloyd, 2013) caution against providing materials while using digital games, as it is a potential adult education factor where many older adults have difficulty learning new technologies.

Besides, the researchers pointed out that the success of the learning environment depends in part on the role of the facilitator.

There is also a clear difference in a pair of studies with adults who learn digital technologies, which is that a skilled facilitator means success in engaging students in technology, and at the same time the lack of a structured environment in the second study with a disorganized facilitator made it more difficult for adults to achieve success. It is worth noting that the dual studies included students who were older than the regular residents of the junior college, and their ages ranged from 58 to 67 years. However, the search This may be a clear indication of the difficulty that non-traditional learners in universities face in adapting to technology platforms based on potential games.

After reviewing the descriptive literature, four factors were identified that would show how digital learning games have been successful in engaging students.

(Buckley & Anderson, 2006):

- Control of character and game environment
- Instant feedback and rewards
- Scalable challenges
- Possible students conquer

Dickie (2006) also used an analysis of the scientific literature to speculate that MMORPGs would have a benefit. This leader not only engages students but also helps maintain their attention on the assignment.

Finally, it has been indicated in the literature that facilitators may find games to attract students' attention, which is an essential component of personal participation when applied to learning.

## **2.2 Psychological Capital**

Psychological capital is essentially an individual's positive development state, which is described by four fundamental components: (1) having confidence (self-efficacy). This indicates the effort required to succeed in difficult tasks; (2) Optimism is the creation of a positive condition for the individual and his feeling towards the future; (3) Resilience and is represented in the speed of adaptation and perseverance in achieving goals, (4) (hope) and this is essential for success.

In positive psychology, psychological capital is a key term (Luthans, Avolio, Walumbwa & Li, 2005), as it contains capabilities that all share the ability to achieve goals and continuous pursuit in addition to the capacity for internal control, flexibility and efficiency. Optimism, self-efficacy, hope, and endurance are characteristics of psychological capital (Luthans, Youssef, & Avolio, 2007). It also gives consideration and importance to studying different circumstances and their impact on the individual and how to deal with them, all of which leads to achieving success from a positive perspective that depends primarily on continuous effort. (Luthans, Youssef et al., 2007) As a result, positive psychological capital can be described as positive psychological energy such as motivation, hope, self-efficacy, stamina, and the capacity to persevere and bounce back to achieve success (Luthans, Youssef et al., 2007) Good psychological capital has been related to job engagement and employee retention in many surveys (Luthans, Youssef et al., 2007). Employees with strong psychological resources are able to respond to their job environment and feel comfortable to a large degree, according to the findings (Luthans, Avey, Avolio, Norman, & Combs 2006). The components of psychological capital are defined as follows: motivation, self-efficacy, hope, and resilience.

Avey, Reichard, Luthans, & Mhatre (2011) indicated that psychological capital is a comprehensive construct made up of four individual variables. Many studies have been trying to contribute to these four components and link them to organizational performance management and demands (Bakker & Schaufeli, 2008). Despite this, the contribution to the field of psychological capital is still in its development stage (Avey, Richard, Luthans, & Mhatre, 2011).

Hopfull (2002) has indicated that it is necessary to view psychological capital as a resource as well as that psychological resource theory can be used to achieve this goal (Avey, Reichard, Luthans, & Mhatre, 2011). Based on the definition of this theory, it has been indicated that resources can be individually represented as valuable assets such as well-being, tranquility, and self-esteem in the first place or are either used as tools to obtain other valuable materials (Hobfoll, 2002).

According to Hobfoll (2002) the principal resources are independent of one another. In doing so, to gain a better understanding, several sets of personal resources are developed to prevent individual interference.

There are many aspects in common to optimism, self-efficacy, hope, and resilience, although these are separate concepts and therefore established for the theoretical interpretation of psychological capital as multidimensional (Avey, Reichard, Luthans, & Mhatre, 2011).

When these combinations are combined, it is easy to determine the state of the food if it suffers from a positive state through a feeling of confidence in exerting the effort required for success, which in turn indicates self-efficacy, along with optimism, which means feeling positive towards success, in addition to continuing to humiliate efforts from Resolve the connection to goals or find new solutions and finally the ability to adapt and move forward in the face of difficulties, which is represented in flexibility (Luthans, Youssef, & Avolio, 2007).

### **2.2.1 Optimism**

Optimism is simply a personality trait that depends on the positive circumstances surrounding the person, as it interprets it, but based on long-term personal factors, while you interpret negative conditions based on short-term external factors (Yusef and Lothan, 2007). According to (Carver and Scheer, 2002) optimism consists of two main factors, proliferation and persistence, and they generally summarize people's view of events. In the sense that individuals who have an optimistic outlook can welcome obstacles as they view them as opportunities for success and challenges and here emerges perseverance (Luthans et al., 2005), Thus there is a close positive correlation between

optimism and job engagement (Arakawa & Greenberg, 2007; Medlin & Faulk, 2011).

### **2.2.2 Self-Efficacy**

Self-efficacy refers to a person's view of himself and his belief that he can perform the work tasks required of him in certain circumstances (Bandura, 1997). Both (Avi and others, 2009; Hayek, 2012) referred to self-efficacy as the ability of the individual to perceive and interpret events and how the individual uses to perceive these events, and this in turn deals with the individual's ability to face challenges. Also (Stajkovic & Luthans 1998) they referred to self-efficacy and described it as the individual's confidence in himself to push cognitive resources or demonstrate behavioral behaviors in order to perform and excel at such tasks.

### **2.2.3 Hope**

Hope is a positive emotion that boosts a person's motivation to succeed at a mission (Avey, Wernsing & Luthans, 2008). Therefore, it has a multidimensional form. Hope can be described as the "strength of the will" as well as the "drive force" of a person (Avey, Luthans & Jensen, 2009; Clapp-Smith, Vogelgesang & Avey, 2009; Snyder, 2002). Whereas, willpower on the other hand refers to the desire to resist short-term temptations in order to accomplish long-term goals, and this simply means delaying satisfaction, and willpower also refers to the ability to plan and think in the face of challenges (Snyder, Irving, & Anderson, 1991). Snyder (2002) indicated that hope gives an effect that protects against inability to control and weakness and also gives the ability to predict correctly; Therefore, maintaining hope among employees has a very high impact on employee well-being. Moreover, a positive relationship has been found between hope and job engagement according to (Adams et al., 2002; Othman & Nasurdin, 2011; Youssef & Luthans., 2007).

### **2.2.4 Resilience**

Resilience refers to the individual's ability to adapt in the presence of setbacks, and it also indicates the person's ability to arrange his life and affairs (Luthans, 2002a). Rutter (1987) defined it as the ability of the individual to deal with

success and ease with events to face obstacles in a similar context. Luthans (2002b) defined resilience as the ability to recover in light of adversity. Personalities with high resilience can return to their normal life path even after exposure to stressful events and adversities. Therefore, flexibility indicates the extent of an individual's strength and capabilities to solve problems and deal with adversity (Baumgardner & Crothers, 2010). Also, a positive relationship was found between flexibility and engagement in work (Luthans, Avolio et al., 2007; Youssef & Luthans, 2007).

### **2.2.5 The relationship between Psychological capital and performance**

Psychological capital helps create an opportunity to share positive relationships between individuals as well as companies, but this depends on encouragement, whether at the level of the organization as a whole or the individual level. A positive relationship has been found between self-efficacy and performance according to Forbes 86, and a relationship has also been found between well-being and optimism, which is an essential component of psychological capital. Many studies have shown that performance is linked with resilience (Coutu, 69).

On this basis, it was agreed that the employees who have a high degree of resilience are also the ones who have the ability to creativity and imagination, especially in the constantly changing work environment, which represents a challenge for most employees of the company and those who enjoy flexibility only those who can adapt.

The research and studies of Peterson and others (2011), indicated that the increase and decrease in the psychological capital of employees also affect their job performance. On this basis, it can be concluded that psychological capital, with its four components, has a strong impact and a positive relationship on job performance. There is a suggestion suggested by Peterson and others (2011), which is that saving or reducing resources affects the increase and decrease of the psychological capital of employees.

### **2.2.6 Psychological capital and motivation**

Studies have indicated that the motivational factors can be identified for each person through his psychoanalysis, which represent hope, confidence, and durability in its self-effectiveness. Studies and research have also shown that motivation is a



fundamental factor and an integral part of the performance as if it had a direct effect on quality. (DeDonno et al. 2008).

in the end, and some knowledge of most of the studies related to psychological capital, it can be inferred that there are a variety of relationships between performance and work satisfaction and the basic components of psychological capital, and most of them indicate positive relationships. After looking at the studies related to job performance, satisfaction and motivation, a positive relationship was also found between them, and from here it can be said that performance, in turn, is strongly linked to motivation. (Çavuş and Gökçen. 2014).

### **2.2.7 How to work on psychological capital?**

There are potential mechanisms through which psychological capital works, but there is still a need to intensify experiments to know how to enhance the basic components of psychological capital in specific patterns, and therefore qualitative research is the most appropriate way to achieve a deeper understanding of these patterns and mechanisms.

Also, it also requires verification and a deeper understanding of supervisors (Bernerth & Aguinis 2016). According to the visualization of Luthans & Avolio (2003; see also Avolio & Luthans 2006) in which they provide a true leadership model, where PsyCap and positive regulatory text are precedents for the development of authentic leadership. (Petersen 2015).

There are numerous studies based on presenting real models that would enhance the future understanding of the mechanisms of psychological capital, including what was presented by (Kozlowski & Klein 2000) in the so-called "ambiguous aggregation" or "minimum / maximum exposure" or "flowery appearance". These models had an important role in enhancing understanding and action on how to apply in reality.

### **2.2.8 Psychological capital's development**

In order to develop the psychological capital of employees in general, we must focus on the surrounding environment in the first place. As the development of psychological capital leads to the promotion of positive thinking patterns, it also leads to the replacement of established beliefs. Therefore, it is necessary to provide a positive and favorable organizational climate for employees. For example, several

axes should be verified if the developing employee is facing rigid structures, limited independence, toxic leadership, ineffective team dynamics, unreasonable pressures, or insufficient resources, all of these factors trigger negative results. Affect the positive psychological capital. Lothian and Joseph Morgan arrived simultaneously. Organization pastor. The psychological capital results will develop if the employee is provided with moral support, empowerment, encouragement, appreciation, and rewards (Petersen 2015). This, in turn, affects their level of well-being, which extends far beyond the workplace.

It is also necessary during the development of psychological capital to work on setting goals and mentally training on how to pursue goals. Also, attention must be paid to good planning, especially in case of emergency, to ensure that obstacles are overcome. Moreover, measurable and specific goals are set, and small groups can be used to share experiences and opinions, and thus this approach helps develop both hope, effectiveness, flexibility, and optimism simultaneously and this is done through activities, whether at the individual or organizational level.

According to Yousef Morgan and Sanderman (2014), there are four characteristics of work in the effective development of psychological capital. First, it must be borne in mind that the purpose of the intervention is to obtain positive and specific results. Second, an attempt must be made to reconcile the psychological state of capital with the current reality, by focusing on individual and collective strengths and flexibly manipulating them. Third, this intervention should be evidence-based and aim to add real value. Finally, the real tangible benefits of the intervention must be verified and ensured that it outweighs its cost to achieve a positive return on investment (Luthans et al. 2006a, 2015).

### **2.3 Creativity**

The creative behavior of employees is a competitive advantage necessary to ensure the survival of the company (George, 2007). Creativity, in general, refers to the ability to generate new ideas with the aim of creating a competitive advantage and helping to explore opportunities and even create them (Anderson, Potocnik, and Zhou (2014), as creativity is closely related to finding appropriate solutions to problems and obstacles. The definition of creativity varies in general in the literature,

but All definitions of creativity refer to the ability and focus on producing new and even unique ideas that help the organization gain a competitive advantage in the market (Choi, Anderson, and Veillette (2009). Organizations should have their first and last focus on designing creative environments in order for them to help improve employee performance and improve performance and productivity in general (Anderson et al., 2014).

Generally speaking, we can divide creativity into three categories: personal, motivational, and cognitive.

The first category is the cognitive components of creativity. This category relates to the processes in which the mind operates, which are represented in analysis, intelligence, and perception in general, and the goal of which is to create creative thinking

This means that creativity is a phenomenon that deals with the great processes of the mind. Among the most important components of cognitive creativity are:

- a. Competition: According to Torrence (1974) it means the flow of the mind with the mind, as it is capable of generating many ideas.
- b. Flexibility: It is in the sense of diversity and according to studies, it is closely related to competition and flexibility also helps in producing different types of ideas.
- c. Initiative: It is represented in unique and distinctive thought.
- d. Expansion: which would pay attention to detail.
- e. Combination: This includes the ability to relate experiences, phenomena, and events to each other.

The second category refers to the components of inspiring and emotional creativity this depends on the motivating factors as they have a strong and effective role in creativity to stimulate innovative ideas, which are referred to as the motivational factor. There are several important factors for this category, the most important of which are:

- a. Motivation: It means the internal drive of the person towards the subject or the object.

b. Emotion: the kind, human feeling that people have toward their favorite pastimes. These feelings include feelings of belonging and love.

The third category, which refers to the personality components of creativity.

Here, we must talk about the personality elements, and we cannot be satisfied with the cognitive or motivational components only.

Personality is defined as a dynamic and stable group, which is a mixture of individual characteristics (behavioral, cognitive, and motivational).

The personality traits of creativity are as follows:

a. Confidence: Self-confidence, which in turn helps focus and increase self-understanding.

B. Independent will: or strong will, which is characterized by a spirit of challenge

C- Acceptance of risk: It depends in the first and last place on self-confidence.

D- Acceptance of experience: which is related to experience, whether it results from experiences, behaviors, or events (Zare & Frozunda, 2008).

There are four approaches to take into account when talking about creativity:

1. The psychological approach: Based on it, it is recommended to enhance and develop the creativity of people with intelligence, because this perspective refers to psychological factors, including the level of intelligence and individual talent.

2. The social approach: The perspective here is on the side of the group, as it is necessary to ensure the availability of group factors.

3. Organizational approach: that is, the surrounding variables, which are related to the organizational level variables.

4. Systematic approach: which would provide all the crisis factors, whether individual, collective or organizational. (Afghani, 2015).

### **2.3.1 Creativity at the Organizational level**

Creativity in the workplace or at the organizational level can be defined as the ability to create or produce new and useful ideas and solutions simultaneously

relating to goods, resources, systems and processes (Amabile, 1997; Oldham & Cummings, 1996; Zhou & George, 2001). Most administrators and executive in companies believe that creativity plays a role in improving corporate efficiency and survival of virtually every workplace (Reiter-Palmon & Illies, 2004; Shalley & Gilson, 2004). It also assists institutions in solving challenges as well as developing new technologies and services, creating new opportunities, and making the most of them. Furthermore, it has a direct impact on corporate creativity, performance, and survival (Zhang & Bartol, 2010).

McLean (2005) indicated that innovation in organizations is influenced by both organizational politics and culture, as well as the availability of resources. The results of the research conducted by Chatman and others (1998) came that employee creativity is greatly influenced by company culture and also employee characteristics. After reviewing the research of Sungren, Dimenas, Gustafsson, and Selart (2005), it was discovered that morale and internal staffing play a significant role in building and optimizing an innovative work atmosphere, just as the exchange of information has a positive impact on culture. In contrast, the positive organizational culture had a mediating effect on information sharing and creativity in the organization.

Many types of research focus on conditions that promote or inhibit innovation in organization; one of the most significant types of research is research on ingeniousness organization. (Amabile, 1988; Baas, de Dreu, & Nijstad, 2008; Egan, 2005; James, Brodersen, & Eisenberg, 2004; Oldham & Cummings, 1996; Woodman, Sawyer & Griffin, 1993). Although this has been emphasized, there has been no advancement in understanding the function of consequences. Influence is a term used in general to refer to emotion or mood. Most emotions are generally short, as they are linked to a particular stimulus. Whereas, moods are considered to be more persistent, pervasive, and less associated with specific stimuli (Frigda, 1994).

Despite this, Gabel and Harmon Jones (2008) state that positive moods and feelings were shown to be beneficial in previous studies affect an expanded knowledge even if moods differ from feelings. There are some studies that focused on the effect of training on creativity as it was clear in the study of Murdock, Isaacson, and Lawr (1993), where the results of their study indicated

that the emphasis on creativity training actually enhances the creative behavior of employees. In addition, the results of the research of both Scott and Leritz and Mumford (2004) confirmed the results of Murdock and others (1993). Which focused on examining the training programs and their impact on creativity, in addition, their study also indicated that most of the successful creativity training programs emphasized the development of cognitive skills and the use of detection techniques. Matters and realistic exercises. In addition, a large number of studies were monitored that focused on studying the effect of leadership style on employee creativity. Like the results of a study by Oldham and Cummings (1996), which showed a close relationship between non-controlling supervision and improved employee creativity.

Fredrickson and Lozada (2005) have suggested, that (1) to improve prosperity the number of positive experiences exceed the number of negative ones, (2) to differentiate between positive experiences of 2,9 or greater from those categorized as prosperous, and (3) that the positive results of a positive ratio do not continue to develop forever. On the contrary, prosperity may decline after reaching an upper limit.

Therefore, in other contexts, different ratios were identified (For example, depression recovery, happy relationships, and the productivity of organizational terms).

Some studies have shown that there is a strong correlation between creativity and positive influence (Amabile et al., 2005; Rego, Machado, Leal, & Cunha, 2009), but there is also a negative association in other studies (George & Zhou, 2002). According to Amabile et al. (2005), the connection between negative impact and innovation "comes mainly from the fields of literature and the arts, where artistic people work as individuals", but this is not the case with the majority of organization's representatives.

It is difficult for many managers in organizations to accept creative environments for several reasons, the most important of which are lack of risk and the difficulty in discovering new theories and methods, which is a must in creativity (Promand, 2008).

Five stages of creative thinking are represented as follows (DuBrin, Leadership, Practice and Skills Research Results, 2008):

- 1- The opportunity to find challenges: It is to identify the problem from the beginning and the person to realize that there is a problem that must be solved.
2. Immersion: which refers to the stimulation, especially the stimulation of creative thinking in individuals.
- 3- Incubation: It refers to the individual's ability to retain facial data or see data first so that work does not begin seriously, and to involve his subconscious mind in that, as his mind will be fully prepared after collecting the information completely.
- 4- Insight: the ability to resilience and adaptability to think unexpectedly to face challenges
- 5- Evidence and application: This is done by using logic and evidence.

### **2.3.2 Employees Creativity**

Creativity is the skill of creating new ideas along with the ability to analyze and solve problems in creative ways and obtain tangible results (Swati Metal, Rajab Lukan Dahar, 2015). This skill requires certain characteristics, including the determination to face challenges, whether organizational or environmental (Bandora, 1986). In the time of globalization and the speed of change, which was a major reason for creating a continuous atmosphere of challenge, creativity became the preoccupation of all organizations, but rather it is the only and ideal solution to survive. For the employee to have a feature of creativity, several attributes of this employee must be available, for example, excessive critical thinking skills while solving problems are not a feature of creativity, as excessive critical thinking does not stimulate curiosity and imagination, which are two basic requirements for creativity. Creativity is the ability to create or bring something out of nothing, while problem-solving is the ability to fix or get rid of something (Hacker, Stephen; Roberts, Tammy, 2004). Therefore, experience and a high capacity for innovation is an essential factor in increasing the capacity for creativity (Cekmecelioglu & Gonsel, 2013). Psychological empowerment has also been mentioned as another feature of creativity

according to (Martins & Terblanche, 2003). Psychological empowerment lies in its achievement through four dimensions or factors (destiny, influence, meaning, and efficiency), as fate refers to independence, and influence is simply the employee's ability to positively influence his job, and the meaning here is related to the employee's belief in his job, its importance and sense of its significance, as for efficiency refers to To self-efficacy, which was previously mentioned in Positive Psychological Capital of Employee (Spreitzer, 1995).

Accordingly, there is a close relationship between the psychological empowerment of the employee and his productivity as it greatly affects their preparation and qualification for the innovation stage (Zhang & Bartol, 2010).

Therefore, employee creativity is a factor in organizational success.

### **2.3.3 Creativity and optimism**

The existence of a relationship between optimism and creativity is shown by a dimension of the literature, as two main theoretical mechanisms were used in determining optimism, in addition to explaining its effect on attitudinal behavior, the first theory is represented by the explanatory model of the Seligman style (1998). This was based on the fact that it is an interpretive / attribution type, in which optimism entails attributing particular positive outcomes to personal, long-term, and widespread causes, while negative events are attributed to external, fleeting, and specific causes. (Luthans, Youssef & Avolio, 2007; Seligman, 1998). Pessimism attributed to personal, constant, and widespread causes specific negative events. Positive events are attributed to external, provisional, and particular causes.

Optimists often acknowledge meaningful experiences in their lif and they believe their personal motivations for achievement will continue in the future, causing them to become more inspired and active in pursuing their objectives.

It appears in Carver and Scheier (1981) that optimism has a great influence on outcomes through its self-regulatory nature. On this basis, while people realize that there is a contradiction between their current situation and the goal, they begin an assessment process that will have ramifications for their future actions, including:-



(1) Continue efforts to achieve the desired results if the contradiction is reduced and results are desirable.

(2) Reduce efforts if they are aware of the impossibility to achieve the desired results. The most of the time, we should expect optimists to keep working hard, dealing with challenges when they arise, and trying to accomplish their goals. (Carver & Scheier, 1981; Kluemper et al., 2009).

These two previous theories help explain why optimists are more likely to achieve optimistic result, as their positive explanatory attitude motivates them to strive harder and aim to achieve their objectives by believing in their abilities to solve the inconsistencies between their goals and their actual circumstance about these goals.

Based on all of this, optimists should be able to reach high levels of creativity by improving their self-esteem and morals, which would contribute to greater creativity (Goldsmith & Matherly, 2000; Lyubomirsky, Tkach, & DiMatteo, 2006).

Creativity often includes creating something in addition to the challenge of the present time, as it is of course a difficult endeavor by nature, and requires hard work, serious and persistence, and in most cases, there will be frustration (Staw, 1995; Zhou & George, 2003).

Consequently, we can say that optimists cannot be subjected to self-blame and despair as well, and that discourages the search for opportunities and creative solutions to problems. Therefore, they often distance themselves from unfavorable life events. Indeed, they build positive expectations that help them move forward and motivate them to achieve the goal, while the pessimists are burdened with doubts about themselves and pessimistic aspirations (Luthans & Youssef, 2007; Seligman, 1998).

In addition, optimists are most inclined to be optimistic draft and persevere in difficult action plans, as well as find creative ways to resolve problems and use opportunities to achieve objectives (Cacioppo et al., 2008; Fredrickson, 2001; Kluemper et al., 2009; Yusef and Lothan, 2007).

### **2.3.4 The effects of creative contributions**

When there are creative shareholders in any organization, they will always make different decisions that reflect how to express their creativity. For example, there is the push theory for creative contributions (Sternberg, 1999b; Sternberg, Kaufman, and Britz, 2001, 2002) discusses how people invest their creative resources. The main idea here revolves around that creativity has several types and axes, and that depends on how ideas are woven and left forwards in the realm of implementation. According to the suggestion of Sigmund Freud, who adopted a completely new theory related to human thought and motivation, as this proposal was modified by Anna Freud then turns to the differences between artistic contributions vary in nature rather than quantities.

Given the significance of meaning, artistic efforts must be evaluated in light of the situation. If, on the other hand, measuring one's imagination is a product of an environment, this will aid in a better understanding of how the context interacts and how people are judged. After reviewing the literature, it was found that most theories on creativity focus on the characteristics of the individual (Sternberg, 1999a; Ward, Smith, & Wade, 1997). However, the interaction of a person with context, especially the environmental context, cannot be overlooked. Consequently, clarifying the nature of creative contributions is necessary and mandatory, and it needs foundations for expanding the scope, and the classification of work areas is not sufficient at all.

An artistic contribution is an attempt to move an area from one location to another. The creative contributor always has a belief that the business must go as his decisions are characterized by actual practice and leadership. There are many types of creative leadership, but although these nuclei differ, there is no consistent method of evaluation. The scale here is based on the type of creativity. However, creativity also implies the quality of work.

There are eight different kinds of artistic contributions, which are divided into three groups: contributions that embrace current models, contributions that oppose them, and contributions that seek to incorporate the various models. Thus, the first type is very limited in which there is no type of challenge, while the second type may or may not challenge the crowds if the redefinition conflicts with the field. And finally, the third type, which usually drives.

The first type: creativity that accepts the present is represented in several types, including: Forms and try to expand them

1. Replication. The contribution here is in the form of preserving the field instead of pushing it forward, and this type of creativity is referred to as the fixed wheel or the fixed movement that moves in its place.
2. Re-definition. The contribution is made by the authority to re-locate the field, and from here the circular motion is generated as the field is viewed from different points of view.
3. The increase forward. It is simply the contribution by trying to move the field forward but in the same direction that it is going.
4. Advance the increase forward. It is an attempt to move forward in the same direction as well, but to reach a further place.

The second type: creativity that rejects the current Forms and try to replace them

5. Forwarding. The contribution here is to push and move in the direction and it is an attempt to redirect the field from where it is towards a different direction.
6. Reconstruction / redirection. Strictly speaking, rebuilding the past so that it is possible to proceed from that point, but in a different direction than the one, where the push here leads to a movement backward and then re-directing.
7. Replay. The contribution here is trying to reach a different beginning to start from it later, but in a different direction and in a different way.

The third type: a type of creativity that brings together existing models

8. Integration. The contribution here means an attempt to combine two different methods of articulation.

In a nutshell, these are the eight types of creative contributions. (Robert J. Sternberg 2006).

### **2.3.5 The impornatce of creativity**

There is no doubt that creativity is a competitive advantage for organizations and has many roles in several aspects, including developing creative problem-solving skills (DuBrin, Leadership Research Results, Practice and Skills, 2008).

The success and survival of organizations depend fundamentally on rebuilding. This is done through setting goals, coordinating them, and even developing methods to achieve these goals. Moreover, it requires the organization to have a high degree of flexibility to adapt to the continuous changes that are the result of the competitive environment, and therefore creativity is vital and necessary for survival. (Rizyan, 2012).

### **2.3.6 Characteristics of Creativity**

There are several characteristics of creativity, which are (Husseinzadeh and colleagues, 2010):

- 1- Creativity is an acquired skill, meaning it is learnable, and there are levels of creativity
- 2- Creativity has no limits in the sense that it is not limited to specific activities. Creativity is often broad in scope as it can be applied in any field.
- 3- Creativity is not limited to specific people, all people can create, but the difference is only in the level,

### **2.3.7 Factors on creatitivity**

Several factors affect creativity. These factors can be broadly classified into (individual and environmental factors) and classified specifically and in detail into (individual, group, and organizational factors).

1. Individual factors: These are individual experiences that are affected by several variables, including intelligence, empowerment, and personal characteristics
  - a. Ability: which is represented by three main elements: knowledge, intelligence, and skill. As the skills are acquired through learning, experience, and also knowledge while intelligence is inherent
  - b. Characteristics of personality: here is the total dependence on the personal characteristics of the individual. Among the most important of these traits are perseverance, endurance, risk, and independence.

c. Cognitive style: It is one of the best methods for collecting and processing information. Individual differences are directly referred to here in the way of understanding, thinking, and solving problems.

d. Challenges: The challenge is one of the most important factors of creativity, but it is a main motivation and motivation for creativity in general.

2. Environmental factors: This is according to the view of some economists for innovation, which is based on an environmental perspective in biology.

3. Group factors: According to studies on creativity, one of the most important functions of groups in work is creative activities, as groups are the primary place to meet needs. Based on it, the most important group variables that affect creativity can be called group size, group diversity, and group cohesion. And group communication system.

4. Organizational factors: This includes briefly the most important organizational variables that affect creativity, such as leadership style, organizational structure, reward system, business, and resources (Afghani, 2015).

### **2.3.8 The differences between Innovation and Creativity**

At first glance, you might think that there is no difference between creativity and innovation, as they are used interchangeably, but there is a difference between them.

Innovation consists of implementing and using the idea and then transforming it into an effective product (Mugime, 2012). While creativity includes creating the idea from the ground up and the goal is to communicate in an unnatural way among other ideas.

The main differences between creativity and innovation have been summarized as follows:

1. The creation and quality of the idea is represented by creativity, while the method of implementing the idea is specific to innovation.

2. Innovation is a productive process, while creativity is based on imagination.

3. Creativity cannot be measured in any way, unlike innovation that can be measured.
4. Innovation is working towards better presentation and effective practice, but creativity is linked to generating ideas.
5. Creativity does not need tangible financing, unlike innovation, it needs money.
6. Since innovation is linked to practice, it is always linked to risks, but creativity has no risks.
7. Creativity gives the impression of a decisive effect on creating something new, while innovation gives an idea only about creating these things.
8. Creative people have high resilience and have the perseverance to vigorously defend their ideas (Promand, 2008).

Finally, innovation is the practice of implementing the generated idea, but creativity is the generation of the idea from the ground up (Alfani, 2012).

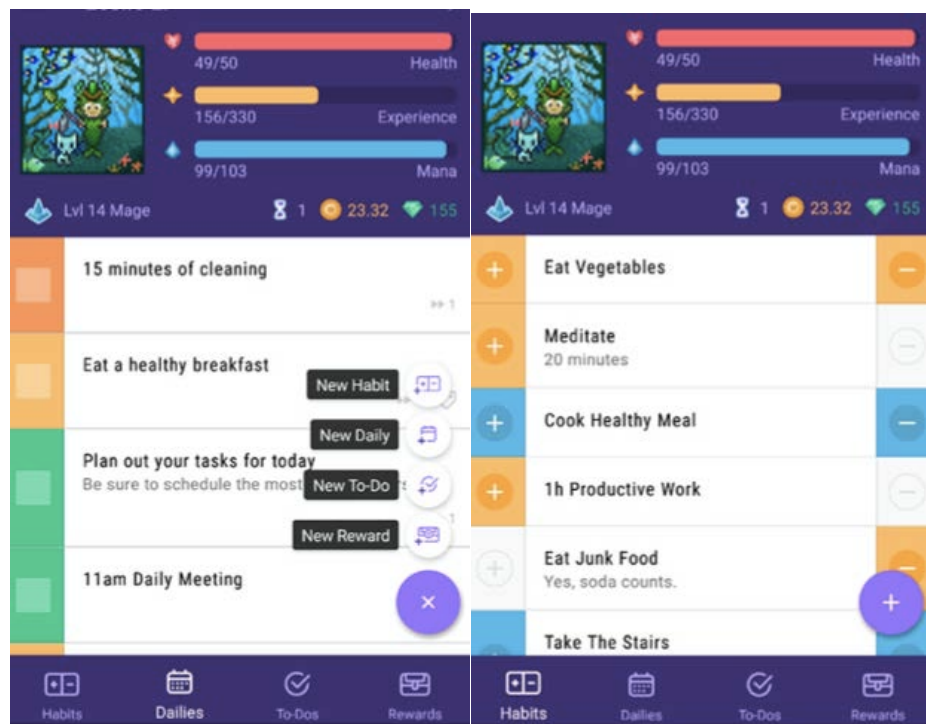
## **2.4 Habitica**

Habitica is habit-tracking technology in the style of an online role-playing game, with the primary goal of humorously motivating users to accomplish their goals. According to smartphone figures on the website, Habitica has been downloaded over 2.5 million times and has nearly 250,000 daily users (Habitica.com). Employees in Bahrain who have played this game for at least two weeks to conduct work-related activities have been threatened by this involved group. Utilizing this approach, we can study the impact on companies in the Kingdom of business gaming. Simultaneously, this approach enables us to measure the mediating effect of gambling on the relationship between psychological capital and creativity among employees in Bahrain.

Habitica is a completely free software that can be used for any mission.

In Habitica, a user can transform all of his everyday activities into progress in a game on the application, where the user plays with a fictional character. There is a special design for the game that includes points, levels, and special rewards (for example, fictional character items). If missions are not completed, an

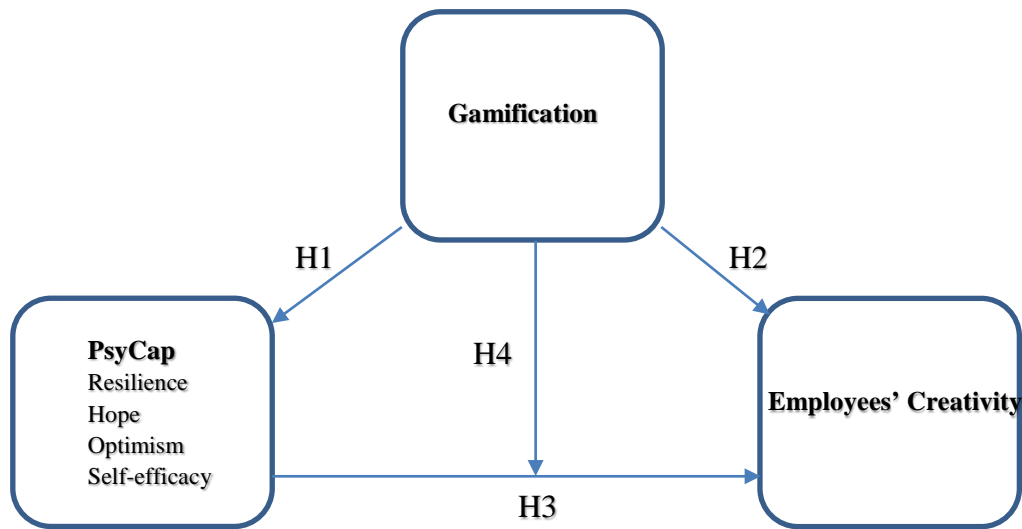
individual can gain and lose experience in raising or losing health, and thus decrease levels. There are several options for using Habitica including habits, dailies, tasks, and incentives (Figure.2.2). Habits are created to help people shape and sustain habits that they wish to break or build. Daily newspapers and activities are intended to establish goals. Users may create checklists for their assignments that can be shown as timescales with an expiration date. They have a function that reminds users in this context. Daily newspapers are reimbursable tasks performed regularly by users. The awards are aimed at encouraging users' motivation. They earn points and special prizes, such as weapons or pets, if they excel in completely completing their searches and dailies or maintaining their routines. User will lose health points if they do not complete their tasks. You can also take part in challenges because users dare to work together towards special obhectives.



**Figure 2.2:** Screenshots from Habitica

## 2.5 Conceptual framework

The following is the conceptual model of the study connecting between the variables:



**Figure 2.3:** Conceptual framework

From the above model came the following hypotheses of this research paper which are the following:

H1: Gamification has a significant impact on Psychological capital.

H2: Gamification has a significant impact on Employees' creativity.

H3: Psychological capital is positively associated with employees' Creativity.

H3a: Resilience is positively associated with employees' Creativity.

H3b: Hope is positively associated with employees' Creativity.

H3c: Optimism is positively associated with employees' Creativity.

H3d: Self-efficacy is positively associated with employees' Creativity.

H4: Gamification has a mediating impact on the relationship between psychological capital and employees' Creativity.



### **3. RESEARCH METHODOLOGY AND DESIGN**

#### **3.1 Overview**

This chapter explains the method of research which is going to be used in this study. The chapter encompasses the plan of the research, which population is going to be a target and the instrument of the research. This chapter also shows the validity and the reliability of the instrument.

#### **3.2 Research Design**

The two main methods of research that social science researchers use are quantitative and qualitative methods. A third type is the mixed-method strategy and it is presently gaining prominence (Creswell, 2003) as it answers questions from both quantitative and qualitative perspectives. Qualitative research strategy might be an indicator of a quantitative research technique and can encourage the comprehension of discoveries of quantitative research (Miles and Huberman, 1994). The question of this study is answered using quantitative method of research. The approach encompasses gathering and analyzing quantitative data. The data collected are in numbers scheme and are gathered in the form of questions (Uma and Roger, 2016).

Researches can be grouped into distinctive types by determining the nature of the study. The research can be explanatory (clear problem) or exploratory (unclear problem) (Yin, 2003; Zikmund, 2000). Explanatory research focuses on the why aspect of the problem (Balnaves and Caputi, 2001). In explanatory research the researcher examines effects of one variable on another variable (Singh, 2006). In this research, the effect of gamification on the relationship between psychological capital and employees' imagination is examined.

### **3.3 Population and sampling**

A sample is defined as a selected group of individuals who were observed in the course of research from among a large number of people. This is due to the difficulty of studying the entire population, and based on it, a group of people is selected to carry out the study and build the results on it. The definition of population is the group of entities on which you may want to draw inferences.

The implicit population of the research is all employees in Bahrain who are using Habitica application for at least two weeks and who are not using it at all, to compare between of them. However, data was collected from different types of private companies in the Kingdom of Bahrain. Simple and random sampling technique is used in order to collect data. Since the most agreed number for minimum sample size is 100 in order to get significant results, I decided to choose 115 employees who are using the app and 122 employees who are not using it, so the total sample was 237 employees from different companies in Bahrian. I decided to choose this number of responses for both versions as my sample size to decrease the bias in the expected coefficient of determination, R squared.

### **3.4 Tools & Measures for collecting the Data**

Due to the requirements of the research objective, both secondary and primary data have been collected and used. The main sources for secondary data are books, articles, previous thesis, and websites for extract descriptive and narrative information. While the primary data, questionnaires have been used as a tool. The questionnaire distributed to employees from different companies in Bahrain.

Generally, the questionnaire designed by three parts:

- 1- Demographical information: respondents were asked about their age, education, work experience and their position in the organization.
- 2- The variable (Psychological Capital): Psychological capital was measured with 12-items developed by Luthans (2007). Responses were evaluated on a six-point scale which is presented in Table 1.

**Table 2.1:** The response scale

1	2	3	4	5	6
Strongly disagree	Moderate disagree	Slightly disagree	Slightly agree	Moderately agree	Strongly agree

The variable (Employees' Creativity): creativity was measured with a 13-item scale developed by Zhou and Geirge (2001) and three additional items from Scott and Bruce (1994). The items were evaluated on a five- point scale, from 1= 'not at all characteristic' to 5 = 'very characteristic'.

### **3.5 Administration of questionnaire**

The questionnaire was published online through a Google Form. A WhatsApp link was sent to the employees personally and was posted on linked in and special communities for companies in Bahrian.

### **3.6 Data analysis**

IBM SPSS V21 was used to analyze data. I used factor analysis, reliability analysis, descriptive statistical analysis, correlation analysis, and linear-regression analysis methods.

As psychological capital is a four-dimensional construct, I ran EFA by using responses to all psychological capital items and i have got four-factor solution. That way I was able to reduce the number of variables or dimentions. I requested a rotated solution by using oblique rotation, since responses to the subscales of the same construct may be expected to be correlated. With regards to creativity, I have got a single-factor solution, as I do not consider this construct as multidimensional. I assessed reliability of the subscales or scales by estimating Cronbach's alpha for each of them.

## 4. ANALYSIS AND FINDINGS

The data that was analyzed and explained initiated the results of this study and this chapter previews these findings. The findings of the respondents and their characteristics are then provided in the sample profile, then the descriptive statistics of the variables are described and their means and standard deviations are provided. Next, the correlation analysis results are presented as well as the findings of the regression analyses. Lastly, hypotheses examination is described.

### 4.1 Frequency Analysis and Sample Characteristics:

**Table 4.1:** Sample characteristics

Variables	Frequency	%
Age		
18 – 30	81	34.2
31 – 42	88	37.1
43 – 54	61	25.7
55 – 65	7	3.0
Total	237	100.0
Experience		
1 to 5	70	29.5
6 to 10	65	27.4
11 to 15	68	28.7
16 - more	34	14.3
Total	237	100.0
Education		
H / S graduate	1	.4
Bachelor (BAs)	170	71.7
Master	61	25.7
PHD	5	2.1
Total	237	100.1
Current Position		
Executive	45	19.0
Middle Manager	61	25.7
Manager	74	31.2
Non-managerial employee	57	24.1
Total	237	100.0

Table 2 reveals that 34.2% of the participants were between the ages 18- 30 and 37.1% were between the ages 31- 42. The rest of the participants were above 43 years old. 29.5% of the participants have experienced between 1 to 5 years. 27.4 had an experience of 6 to 10 years. The rest of the participants had more than 11 years of experience. About 71.7% of the employees have a bachelor's degree, and 25.7% have a master's degree. Lastly, 19.0% of the participants were executives, 25.7% were Middle managers or supervisors, 31.2% were managers, and 24.1% were non-managerial employees.

## 4.2 Factor Analysis

### 4.2.1 Factor Analysis of Psychological Capital for (Employees who are using Habitica):

I used the KMO and Bartlett's test and the significance level were less than 0.05, therefore the analysis was statically significant

**Table 4.2:** KMO and Bartlett's Test 1

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.834
Bartlett's Test of Sphericity	Approx. Chi-Square	656.494
	df	66
	Sig.	.000

A four-factor solution from FA regarding the psychological capital items shows that the four extracted factors explain almost 73.367% of the variance in these items. While the eigenvalues for the first three factors were above 1 (5.2, 1.8, and 1.1, respectively), the fourth factor was lower than the threshold value and had an eigenvalue of almost 0.9. The table below reveals that factor loadings of individual items are not problematic. None of these items display any cross-loadings.

**Table 4.3:** Factor loadings of psychological capital items (DATASET1)

Items	Factor1	Factor2	Factor3	Factor4
“If I should find myself in a jam at work, I could think of many ways to get out of it.” (HO1)		.597		
“Right now, I see myself as being pretty successful at work.” (HO2)		.789		
“I can think of many ways to reach my current work goal.” (HO3)		.784		
“At this time, I am meeting work goal that I have set for myself.” (HO4)		.735		
“I can be on my own to speak at work if I have to.” (RE1)			.742	
“I usually take stressful things at work in stride.” (RE2)			.879	
“I can get through difficult times at work because I’ve experienced difficulty.” (RE3)			.674	
“I always look on the bright side of things regarding my job.” (OP1)				.692
“I’m optimistic about what will happen to me in the future as it pertains to work.” (OP2)				.851
“I feel confident in representing my work area in meetings with management.” (EF1)	.849			
“I feel confident contributing to discussions about the company's strategy.” (EF2)	.867			
“I feel confident presenting information to a group of colleagues.” (EF3)	.861			

#### 4.2.2 Factor Analysis of Psychological Capital for (Employees who are NOT using Habitica):

**Table 4.4:** KMO and Bartlett’s test 2

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.822
Bartlett's Test of Sphericity	Approx. Chi-Square	746.507
	df	66
	Sig.	.000

A four-factor solution from FA regarding the psychological capital items shows that the four extracted factors explain almost 74.909% of the variance in these

items. While the eigenvalues for the first three factors were above 1 (5.4, 1.6, and 1.15, respectively), the fourth factor was lower than the threshold value and had an eigenvalue of almost 0.89. The table below reveals that factor loadings of individual items are not problematic. None of these items display any cross-loadings.

**Table 4.5:** Factor loadings of psychological capital items (DATASET2)

Items	Factor1	Factor2	Factor3	Factor4
“If I should find myself in a jam at work, I could think of many ways to get out of it.” (HO1)	.748			
“Right now, I see myself as being pretty successful at work.” (HO2)	.779			
“I can think of many ways to reach my current work goal.” (HO3)	.759			
“At this time, I am meeting work goal that I have set for myself.” (HO4)	.800			
“I can be on my own to speak at work if I have to.” (RE1)			.846	
“I usually take stressful things at work in stride.” (RE2)			.776	
“I can get through difficult times at work because I’ve experienced difficulty.” (RE3)			.780	
“I always look on the bright side of things regarding my job.” (OP1)				.669
“I’m optimistic about what will happen to me in the future as it pertains to work.” (OP2)				.918
“I feel confident in representing my work area in meetings with management.” (EF1)		.859		
“I feel confident contributing to discussions about the company's strategy.” (EF2)		.715		
“I feel confident presenting information to a group of colleagues.” (EF3)		.842		

### 4.2.3 Factor Analysis on Creativity Variables for (employees who are using Habitica):

**Table 4.6:** KMO and Bartlett's Test 3

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.923
Bartlett's Test of Sphericity	Approx. Chi-Square	1160.643
	df	78
	Sig.	.000

The two-factor solution from EFA that concerns the creativity scale reveals that these factors explain slightly above 68% of the variance in creativity items. The eigenvalue for this factor is 7.92, and the eigenvalue for the second possible factor is only 1.2. The table below presents the factor loadings of items of this scale.

**Table 4.7:** Factor loadings of Creativity items (DATASET1)

Item	Factor1	Factor2
"I suggest new ways to achieve goals or objectives."	.723	
"I come up with new and practical ideas to improve performance."	.795	
"I search out new Technologies, processes, techniques, and/or product ideas."	.608	.487
"I search out new ways to increase quality."	.781	
"I am a good source of creative ideas."		.860
"I am not afraid to take risks."	.684	
"I promote and champion ideas to others."	.652	
"I exhibit creativity on the job when given the opportunity to as."	.615	.525
"I develop adequate plans and schedules for the implementation of new ideas."	.715	
"I often have new and innovative ideas."		.877
"I come up with creative solutions to problems."	.473	.714
"I often have a fresh approach to problems."		.807
"I suggest new ways of performing work ideas."	.623	.633



**4.2.4 Factor Analysis on Creativity Variables for (employees who are NOT unisg Habitica):**

**Table 4.8:** KMO and Bartlett’s Test 4

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.891
Bartlett's Test of Sphericity	Approx. Chi-Square	756.470
	df	78
	Sig.	.000

The two-factor solution from EFA that concerns the creativity scale reveals that these factors explain slightly above 57.8% of the variance in creativity items. The eigenvalue for this factor is 6.2, and the eigenvalue for the second possible factor is only 1.1. The table below presents the factor loadings of items of this scale.

**Table 4.9:** Factor loadings of Creativity items (DATASET2)

Item	Factor1	Factor2
“I suggest new ways to achieve goals or objectives.”		.738
“I come up with new and practical ideas to improve performance.”		.649
“I search out new Technologies, processes, techniques, and/or product ideas.”		.592
“I search out new ways to increase quality.”		.761
“I am a good source of creative ideas.”	.728	
“I am not afraid to take risks.”	.750	
“I promote and champion ideas to others.”	.849	
“I exhibit creativity on the job when given the opportunity to as.”		.796
“I develop adequate plans and schedules fort he imlementation of new ideas.”	.636	
“I often have new and innovavtive ideas.”	.498	.507
“I come up with creative solutions to problems.”	.563	
“I often have a fresh approach to problems.”	.633	
“I suggest new ways of performing work ideas.”	.604	.450

### 4.3 Reliability findings

Table 11 displays the internal consistency coefficients (Cronbach's Alpha) of the scales.

**Table 4.10:** Reliability analysis

Number of Items	Variable	Alpha
3	Efficacy	.911
4	Hope	.866
3	Resilience	.890
2	Optimism	.747
13	Creativity	.942

**Table 4.11:** displays the reliability statistics for Dataset1:

Reliability Statistics	
Cronbach's Alpha	N of Items
.892	31

**Table 4.12:** displays Reliability Test on Dataset2:

Reliability Statistics	
Cronbach's Alpha	N of Items
.928	29

### 4.4 Descriptive analysis:

Four dimensions of the psychological capital of employees were measured. The table below (Table 14) displays the descriptive findings regarding the psychological capital variable with its dimensions and creativity as well.

**Table 4.13:** Descriptive statistics for psychological capital with four dimensions and creativity.

	N	Mean	Std. Deviation
Self Efficacy	237	4.3854	1.07208
Hope	237	4.0970	1.00004
Resilience	273	3.8284	1.05302
Optimism	237	4.0021	1.10325
Psychological Capital	237	4.0782	.89274
Creativity	237	3.5771	.76899
Valid N(listwise)	237		

#### 4.5 Correlation analysis:

Table 15 below presents correlations between variables of the study.

\*\* Correlation is significant at the 0.01 level (2-tailed).

**Table 4.14:** Correlations

	Hope fac 2	Self- Efficacy fac 1	Resilience fac 3	Optimism fac 4	Psy Cap	Creativity	Used Habitica (Gamifica tion)
Hope fac 2	1						
Self Efficacy fac 1	.648**	1					
Resilience fac 3	.643**	.606**	1				
Optimism fac 4	.614**	.613**	.586**	1			
Psy Cap	.854**	.850**	.838**	.838**	1		
Creativity	.536**	.576**	.457**	.511**	.616**	1	
Used Habitica (Gamifica tion)	.506**	.531**	.675**	.531**	.665**	.420**	1

#### 4.6 Regression analysis:

This section provides findings from regression analyses. First, Table 16 for the variables entered and removed. Then the summary of the 3 models is presented in table 17.

**Table 4.15:** Variables Entered/ Removed

Variables Entered/Removed <sup>a</sup>			
Model	Variables Entered	Variables Removed	Method
1	Self_Efficacy_fac_1	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove>= .100).
2	Hope_fac_2	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove>= .100).
3	Optimism_fac_4	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove>= .100).

a. Dependent Variable: Creativeness

**Table 4.16:** Models' summary

Model Summary <sup>d</sup>						
Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate	Durbin-Watson
1	.576 <sup>a</sup>	.332	.329		.62975	
2	.614 <sup>b</sup>	.377	.372		.60921	
3	.628 <sup>c</sup>	.395	.387		.60185	2.003

a. Predictors: (Constant), Self\_Efficacy\_fac\_1  
b. Predictors: (Constant), Self\_Efficacy\_fac\_1, Hope\_fac\_2  
c. Predictors: (Constant), Self\_Efficacy\_fac\_1, Hope\_fac\_2, Optimism\_fac\_4  
d. Dependent Variable: Creativeness

Model 1 incorporates efficacy as the predictor of creativity. Results show that efficacy relates positively to creativity ( $\beta = .413$ ,  $p < .001$ ). The R-squared of this model is .332, which means the model explains 33.2% of the variance in creativity. The associated statistic reveals that the explained variance is statistically significant ( $F = 116.595$ ,  $p < .001$ ).

Model 2 features efficacy and hope as the predictors of creativity. Results show that efficacy and hope relate positively to creativity ( $\beta = .283$ ,  $p < .01$ ) and ( $\beta = .323$ ,  $p < .001$ ) and ( $\beta = .215$ ,  $p < .01$ ) and ( $\beta = .323$ ,  $p < .001$ ). The R-squared of this model is 0.377, which means the model explains 37.7% of the variance in creativity. The associated statistic reveals that the explained variance is statistically significant ( $F = 70.856$ ,  $p < .001$ ).

Model 3 incorporates efficacy, hope, and optimism as predictors of creativity. Results show that efficacy, hope, and optimism relate positively to creativity ( $\beta = .235$ ,  $p < .001$ ), ( $\beta = .164$ ,  $p = .003$ ) and ( $\beta = .125$ ,  $p = 0.01$ ). The R-squared of this model is .395, meaning the model explains 39.5% of the variance in

creativity. The associated statistic reveals that the explained variance is statistically significant ( $F= 50.653, p<.001$ )

#### 4.7 Mann-Whitney test

Table 18 displays the ranks values for each factor for the employees who are using Habitica (Dataset1) and the employees who are not using Habitica (Dataset2). For the self-Efficacy fac1, the mean rank for the employees who are not using Habitica is 83.09, while the mean rank for the employees who are using Habitica is 157.10. For the other factors, there are big differences too between the mean ranks for the employees who are using Habitica and the employees who are not using it. Therefore, we can say that this indicates the impact of using Habitica which represents Gamification on the factors.

**Table 4.17:** Rank values for the factors

Ranks	Used_Habitica	N	Mean Rank	Sum of Ranks
Self_Efficacy_fac_1	0	122	83.09	10137.00
	1	115	157.10	18066.00
	Total	237		
Hope_fac_2	0	122	84.92	10360.50
	1	115	155.15	17842.50
	Total	237		
Resilience_fac_3	0	122	73.98	9026.00
	1	115	166.76	19177.00
	Total	237		
Optimism_fac_4	0	122	83.91	10236.50
	1	115	156.23	17966.50
	Total	237		
Psychological_Capital	0	122	74.71	9114.50
	1	115	165.99	19088.50
	Total	237		
Creativeness	0	122	86.27	10525.50
	1	115	153.72	17677.50
	Total	237		

Then, we applied Mann-Whitney test to evaluate that there is a significance difference between the Mean Rank Values of the factors. Table 19 below shows that the significance value was less than 0.05. Thus we can say that there is an

exist significance difference for the factors for the employees who are not using Habitica and who are using it.

**Table 4.18:** Test statistics

Test Statistics <sup>a</sup>						
	Self_Efficacy_fac _1	Hope_fac_ 2	Resilience_fac _3	Optimism_fac _4	Psychological_Capi tal	Creativit y
Mann-Whitney U	2634.000	2857.500	1523.000	2733.500	1611.500	3022.500
Wilcoxon W	10137.000	10360.500	9026.000	10236.500	9114.500	10525.500
Z	-8.352	-7.909	-10.458	-8.199	-10.244	-7.574
Asymp. Sig. (2-tailed)	.000	.000	.000	.000	.000	.000

a. Grouping Variable: Used\_Habitica

#### 4.8 Hypotheses testing

This study proves what is being presented in section 4, Table 20 represents the findings of examining the hypotheses.

**Table 4.19:** Hypotheses testing findings

Hypothesis	Statement	Result
H1	Gamification has a significant impact on psychological capital	Supported
H2	Gamification has a significant impact on employees' creativity	Supported
H3	Psychological capital is positively associated with employees' creativity	Supported
H3a	Resilience is positively associated with employees' creativity	Not Supported
H3b	Hope is positively associated with employees' creativity	Supported
H3c	Optimism is positively associated with employees' creativity	Supported
H3d	Self-efficacy is positively associated with employees' creativity	Supported
H4	Gamification has a mediating impact on the relationship between psychological capital and employees' creativity	Supported

## **5. DISCUSSION AND CONCLUSION**

### **5.1 Conclusion**

This research tests the mediating impact of gamification on the relationship between psychological capital and employees' creativity. The research will help people to understand their thinking and working methods by applying new techniques to motivate them and shift their positive behavior towards creativity and innovation.

The research also recommends strategies for the management of change to ease the process for the employees and the role of gamification in recognizing those employees who go further than their description of work. Although there have become many studies that acknowledge the effect of gamification in many areas, especially education and marketing, there is still a need to study the impact of gamification in the field of work directly (Cardador et al., 2017; Ferreira et al., 2017; Hamari et al., 2014; Rapp et al., 2019). The aim of this research is to look at the impact of gamification at work, in addition to its relationship to the employee's psychological capital and level of creativity. Additionally, we looked at the peculiarities of the work context by exploring frontier influences. To verify this, we had to apply our study to two samples of employees. Employee who have been alternating work-related activities using the Habitica gaming software for at least two weeks are the first sample. The second sample was represented by employees who had not used the application before or any similar application. On this basis, the relationship between psychological capital and creativity was measured on both samples.

Our study yielded three main results, that gamification has a significant impact on psychological capital and on its four dimensions (hope, optimism, resilience, and self-efficacy), gamification has a significant impact on employees' creativity, and psychological capital is positively associated with employees' creativity including its four dimensions except for resilience.

Because of the speed of development in all fields, there has become a constant urgent need for creativity to achieve and achieve organizational goals, and this increases pressure on organizations in general and employees, in particular, to be more creative to keep up. Therefore, companies are always keen to search for the latest methods to encourage and motivate their employees to gain a competitive advantage. On this basis, we must consider the psychological capital of the employees in the first place and take into account the motives of each employee.

According to the regression analysis, a significant relationship between self-efficacy and creativity exists. According to Stankovic and Luthans (1998), self-efficacy refers to the conviction that an individual has regarding mobilizing resources necessary to achieve success with a given task. This goes by this research where it is pointed out that self-efficacy is positively associated with creativity. The regression analysis shows that there is a relationship exists between hope and creativity. According to Duggleby, Cooper, and Penz (2009), research has shown that hope contributes to improved job performance among employees.

According to the regression analysis, we have found that there isn't a statistically significant relationship between resilience and creativity. However, we have found a moderate correlation but, the resilience wasn't able to explain much of the variance in creativity. As Baumgardner and Crothers (2010) allude to, resilience portrays the strengths and coping resources that individuals possess and can be used to overcome tumultuous situations. Luthans, Avolio, Avey, and Norman (2007) further point out that extensive research has made efforts to associate resilience with improved performance of employees at the workplace.

According to the regression analysis, there is a relationship between optimism and creativity. A significant group of studies has also proved a correlation linking both optimism and improved performance among employees in the workplace (Youssef and Luthans, 2007). In organizational contexts, optimism is regarded as an important resource capacity of employees because their optimism to overcome challenging situations can contribute to a positive impact in terms



of achieving defined goals of their respective organizations (Youssef and Luthans, 2007).

The effect of the new HR policies and techniques like gamification and its impact on the positive psychological capital. Therefore, organizations in Bahrain could nurture and put more focus on implementing new techniques to motivate the employees and increase their positive psychological capital for creativity to enhance the productivity of the organizations.

## **5.2 Limitations and recommendations for future studies**

Gamification, in general, is one of the latest techniques used to influence the behavior of a person in general, as the concepts of gamification are closely related to motivation and encouragement, and since it has a clear and directly related effect on the human psyche, therefore, in the practice of human resources, gamification is an emerging field at work.

Some limitations on research are included in the collection of data, which could present many biases based on self-reports (Podsakoff et al., 2003; Podsakoff et al., 2012). In future studies, we, therefore, recommend using more objective measurements and deeper insight into the elements of the game used that are represented in the accomplishments, badges obtained, and similar. Research can also be based on game design (Mekler et al., 2013), or elements used as points, levels, placards, headlines, and character sheeting (Cardador et al., 2017). As some studies have proven that different elements of gamification also have different effects, in terms of motivation (Sailer et al., 2017).

Another limitation is that the data in this study were collected from only one game and the results were generalized based on it. Thus, we recommend that future studies use many different games or applications so that the results can easily be generalized. However, the focus on Habiticia as a single tool used by employees across organizations came from the standpoint of deviating from the norm and out of the company's control by imposing certain or specific mechanisms as all employees whose results were measured were already using this application of their own free will and without any pressure from the administration. It is recommended to take this research further in terms of

focusing on organizational behavior in Bahrain. This research can be implemented and taken further at a group and an organizational level since the performance and creativity of employees can be affected by the behavior of the employees. Other factors of creativity can be analyzed and studied in Bahrain to have a full view of the behavior of a Bahraini employee.

Additional research should be conducted to better understand the intent and scope of the behaviors that staff select for gamification, as well as to compare findings with other gamification implementations (Hamari and Kovisto, 2015; Suh et al., 2017) this should result in a better interpretation of job practices that can be gamified. Also, it is recommended to research the same topic during a stable period and compare the results of both studies.

### **5.3 Recommendations for managers**

We have shown in this research the beneficial effects of gamification at work concerning the psychological capital of employees and their motives as well as their ability to be creative, which leads to increased productivity and efficiency in general. These studies can help creators think of both the emotional and informative aspects of job play, and they can provide advice on how to personalize work gamification in terms of professional roles. Finally, this research has helped to provide insight into how action games are to be used. We discovered signs that people perform for a variety of purposes, including monitoring, self-regulation, the use of prompts, and self-motivation.

## REFERENCES

- Avey, J.B., Luthans, F., and Jensen, S.M.** (2009), 'Psychological Capital: A Positive Resource for Combating Employee Stress and Turnover,' *Human Resource Management*, 48, 677–693. [Crossref], [Web of Science ®], [Google Scholar].
- Avey, J. B., Reichard, R. J., Luthans, F., & Mhatre, K. H.** (2011). Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. *Human Resource Development Quarterly*, 22(2), 127–152.
- Atingdui N.** (2011) Cognitive Dissonance. In: Goldstein S., Naglieri J.A. (eds) *Encyclopedia of Child Behavior and Development*. Springer, Boston, MA. [https://doi.org/10.1007/978-0-387-79061-9\\_599](https://doi.org/10.1007/978-0-387-79061-9_599)
- Aronson, E.** (1997). Back to the future: A retrospective review of Leon Festinger's, "a theory of cognitive dissonance". *American Journal of Psychology*, 110, 127–137.
- Alvani, S. M.** (2012). *General Management* (3 ed.). Tehran, Tehran, Iran.
- Afghan, A. J.** (2015). Evaluation of the Relationship between Organizational Learning and Organizational Creativity. 25-28-33.
- Acevedo, A. A** (2018). Personalistic Appraisal of Maslow's Needs Theory of Motivation: *from "Humanistic" Psychology to integral Humanism. J Bus Ethics* 148, 741–763). <https://doi.org/10.1007/s10551-015-2970-0>
- Arakawa, D., & Greenberg, M.** (2007). Optimistic managers and their influence on productivity and employee engagement in a technology organisation: implications for coaching psychologists. *International Coaching Psychology Review*, 2(1), 78-89.
- Asal, V., & Kratoville, J.** (2013). Constructing international relations simulations: Examining the pedagogy of IR simulations through a constructivist learning theory lens. *Journal of Political Science Education*, 9, 132-143. doi:10.1080/15512169.2013.770982.
- Avey, J. B., Wernsing, T. S., & Luthans, F.** (2008). Can positive employees help positive organizational change? Impact of psychological capital and emotions on relevant attitudes and behaviors. *The Journal of Applied Behavioral Science*, 44(1), 48-70.
- Anderson, A., Huttenlocher, D., Kleinberg, J., & Leskovec, J.** (2013). Steering user behavior with badges. In *Proceedings of the 22nd international conference on World Wide Web* (pp. 95-106). Rio de Janeiro, Brazil.
- Amabile, T. M.** (1997). Motivating creativity in organizations: On doing what you love and loving what you do. *California Management Review*, 40(1): 39–58. [Crossref], [Web of Science ®], [Google Scholar].
- Amabile, T. M.** (1988). "A model of creativity and innovation in organizations". In *Research in organizational behavior*, Edited by: Staw, B.

- M. and Cummings, L. L. Vol. 10, 123–167. Greenwich, CT: JAI Press. [Google Scholar].
- Adams, V. H., Snyder, C. R., Rand, K. L., King, E. A., Sigmon, D. R., & Pulvers, K. M.** (2002). "Hope in the workplace". In R. Giacalone & Jurkiewicz (Eds.), *Handbook of workplace spirituality and organizational performance* (pp. 367- 377). New York: Sharpe.
- Al Kahwaji, Mohamad,** (2019). Guide me and find me: Gamification as motivational drive for participation in crowdsourcing - Master's Thesis, *Eskişehir Anadolu University*.
- Bandura, A.** (2000). Exercise of human agency through collective efficacy. *Current Directions in Psychological Science*, 9(3), 75–78.
- Bandura, A.** (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, N.J.: Prentice-Hall.
- Bandura, A., & Wood, R** (1989). Social cognitive theory of organizational management, *Academy of Management Review*, 1989 (3), p.361-364.
- Bardwell, Tina,** "Gamification with leveling up: Effects on learning science and motivation toward learning science." (2019). Masters Theses/CapstoneProjects.18.[https://digitalcommons.otterbein.edu/su\\_tu\\_master/18](https://digitalcommons.otterbein.edu/su_tu_master/18).
- Bakker, A. B., & Schaufeli, W. B.** (2008). Positive organizational behavior: Engaged employees in flourishing organizations. *Journal of Organizational Behavior*, 29(2), 147-154.
- Barnard, Y., Bradley, M., Hodgson, F., & Lloyd, A.** (2013). Learning to use new technologies by older adults: Perceived difficulties, experimentation behaviour and usability. *Computers in Human Behavior*, 29, 1715-1724. doi: 10.1016/j.chb.2013.02.006.
- Baas, M., de Dreu, C. K. W. and Nijstad, B. A.** (2008). A meta-analysis of 25 years of mood-creativity research: Hedonic tone, activation, or regulatory focus?. *Psychological Bulletin*, 134(6): 779–806. [Crossref], [PubMed], [Web of Science ®], [Google Scholar].
- Bernerth J, Aguinis H.** (2016). A critical review and best-practice recommendations for control variable usage. *Pers. Psychol.* 69:229–83.
- Ballesteros, S., Mayas, J., Prieto, A., Toril, P., Pita, C., Laura, P. d. L., . . . Waterworth, J. A.** (2015). A randomized controlled trial of brain training with non-action video games in older adults: results of the 3-month follow-up. *Frontiers in Aging Neuroscience*, (7), 45. doi: <http://dx.doi.org/10.3389/fnagi.2015.00045>.
- Burawoy, M.** (1979). *Manufacturing consent: Changes in the labor process under monopoly capitalism*. Chicago, IL: *University of Chicago Press*.
- Baumgardner, S. R., & Crothers, M. K.** (2010). *Positive Psychology*. New Jersey: Pearson Education.
- Bandura, A., & Cervone, D.** (1986). Differential engagement of self-seactive influence in cognitive motivation. *Organizational Behaviour and Human Performance*, 38, 92- 113.
- Bohyun Kim** (2015) Understanding Gamification, Library Technology Reports: *Library Technology REPORTS*.
- Clark, D. B., Sengupta, P., Brady, C. E., Martinez-Garza, M. M., & Killingsworth, S. S.** (2015). Disciplinary integration of digital games

for science learning. *International Journal of STEM Education*, 2(1), 1-21. doi:10.1186/s40594-014-0014-4.

- Christine L. Crago, John M. Spraggon, Elizabeth Hunter**, (2020). Motivating non-ratepaying households with feedback and social nudges: A cautionary tale, *Energy Policy*, Volume 145, 111764, ISSN 0301-4215, <https://doi.org/10.1016/j.enpol.2020.111764>. (<http://www.sciencedirect.com/science/article/pii/S0301421520304857>)
- Cugelman, B.** (2013). Gamification: what it is and why it matters to digital health behavior change developers. *JMIR serious games*, 1(1), e3.
- Cramer, H., Rost, M., Holmquist, L.E.**, (2011). Performing a check-in: emerging practices, norms and “conflicts” in location-sharing using foursquare. In: *Proceedings of the 13th International Conference on Human Computer Interaction with Mobile Devices and Services-MobileHCI'11*. Presented at the 13th International Conference, ACM.
- Cardador, M.T., Northcraft, G.B., Whicker, J.**, (2017). A theory of work gamification: something old, something new, something borrowed, something cool? *Hum. Resour. Manag. Rev.* 27, 353–365. <https://doi.org/10.1016/j.hrmr.2016.09.014>.
- Carver, C., & Scheier, M.** (2002). Optimism. In C.R. Snyder & S. Lopez (Eds.), *Handbook of positive psychology* (pp. 231-243). New York: Oxford University Press.
- Cavico, F. & Mujtaba, B. G.**, (2008), “Legal Challenges for the Global Manager and Entrepreneur. Kendal Hunt Publishing Company”, United States.
- Cornelia Gerdenitscha, □, David Sellitscha, Markus Besserc, Sophia Burgerc, Christine Stegmann, Manfred Tscheligia, b, Simone Kriglsteina** (2020) 'Work gamification: Effects on enjoyment, productivity and the role of T leadership', *Electronic Commerce Research and Applications*, 43(100994), pp. 1567-4223 [Online]. Available at: <https://doi.org/10.1016/j.elerap.2020.100994>. (<https://www.sciencedirect.com/science/article/pii/S1567422320300715>) (Accessed: 9 July 2020).
- Cook, D. A., & Artino, A. R.** (2016). Motivation to learn: an overview of contemporary theories. *Medical Education*, 50(10), 997–1014. <https://doi.org/10.1111/medu.13074>.
- Cardador, M.T., Northcraft, G.B., Whicker, J.**, (2017). A theory of work gamification: something old, something new, something borrowed, something cool? *Hum. Resour. Manag. Rev.* 27, 353–365. <https://doi.org/10.1016/j.hrmr.2016.09.014>.
- Clapp-Smith, R., Vogelgesang, G. R., & Avey, J. B.** (2009). Authentic leadership and positive psychological capital: The mediating role of trust at the group level of analysis. *Journal of Leadership & Organizational Studies*, Vol. 15, No. 3, pp. 227-240.
- Christian et al.**, (2011). M.S. Christian, A.S. Garza, J.E. Slaughter Work engagement: A quantitative review and test of its relations with task and contextual performance *Personnel Psychology*, 64 (1) (2011), pp. 89-136.

- Childress, M., & Braswell, R.** (2006). Using massively multiplayer online role-playing games for online learning. *Distance Education*, 27(2), 187-196.
- Choi, J. N., Anderson, T. A., & Veillette, A.** (2009). Contextual inhibitors of employee creativity in organizations: The insulating role of creative ability. *Group & Organization Management*, 34(3), 330-357.
- ÇAVUŞ, Mustafa & Kapusuz, Ayşe.** (2015). Psychological Capital: Definition, Components and Effects. *British Journal of Education, Society & Behavioural Science*. 5. 244-255. 10.9734/BJESBS/2015/12574.
- Devon Proudfoot, Aaron C. Kay,** (2014). System justification in organizational contexts: How a Motivated preference for the status quo can affect organizational attitudes and behaviors, *Research in Organizational Behavior*, Volume 34, Pages 173-187, ISSN 0191-3085,
- Deborah Davidson, Gayle Letherby,** (2019). Use of the internet and griefwork in perinatal loss: Motivations, methodologies and meaning making, *Women's Studies International Forum*, Volume 74, Pages 52-58, ISSN 0277-5395, <https://doi.org/10.1016/j.wsif.2019.02.004>. (<http://www.sciencedirect.com/science/article/pii/S0277539518304291>).
- DeDonno MA, Demaree HA,** (2008). Perceived Time Pressure and the Iowa gambling task judgment and Decision Making. 3:636-640.
- Deci, E.L. & Ryan R. M.**(2015). Self-Determination Theory International *Encyclopedia of the Social & Behavioral Sciences* (Second Edition) Rochester, NY: Elsevier, 486-491. This article is a revision of E.L. Deci (2001) International Encyclopedia of the Social & Behavioral Sciences, Rochester, NY: Elsevier, 11, 7886–7888. <https://doi.org/10.1016/B978-0-08-097086-8.26036-4>.
- Domínguez, A., Saenz-de-Navarrete, J., de-Marcos, L., Fernández-Sanz, L., Pagés, C., & Martínez-Herráiz, J.** (2013). Gamifying learning experiences: Practical implications and outcomes. *Computers & Education*, 63, 380-392.
- Davis, F.** (1959). The cabdriver and his fare: facets of a fleeting relationship. *American Journal of Sociology*, 65(2): 158–165.
- De Man, H.** (1928). *The Psychology of Marxian Socialism*: 509. London: George Allen and Unwin, Ltd.
- Dickey, M.** (2006). Game design and learning: A conjectural analysis of how massively multiple online role-playing games (MMORPGs) foster intrinsic motivation. *Educational Technology: Research and Development*, 55. doi:10.1007/s11423-006-9004-7
- DuBrin, A. J.** (2008). *Leadership Research Findings, Practice and Skills*. Boston New York: Houghton Mifflin Company.
- Dunaway, M. K.** (2011). Connectivism: Learning theory and pedagogical practice for networked information landscapes. *Reference Services Review*, 39(4), 675-685. doi:10.1108/00907321111186686.
- Ederly, D., & Mollick, E.** (2009). *Changing the Game: How Video Games are Transforming the Future of Business*. New York: Financial Times Press.

- Ehrhardt Martinez K., Donnelly K.A., Laitner S,** (2010). Advanced Metering Initiatives and Residential Feedback Programs: A Meta-Review for Household Electricity-Saving Opportunities Report Number E 105 *American Council for an Energy-Efficient Economy Washington, DC.*
- Egan, T. M.**(2005). Factors influencing individual creativity in the workplace: An examination of quantitative empirical research. *Advances in Developing Human Resources*, 7(2): 160–181. [[Crossref](#)], [[Google Scholar](#)].
- Elliott, J., Adams, L., & Bruckman, A.** (2002). No magic bullet: 3D video games in education. *Proceedings of ICLS, 2002.*
- ÜSTÜN, FATİH,** (2014). (THE EFFECTS OF SOCIAL MEDIA AND GAMIFICATION ON PROSPECTIVE STUDENTS' UNIVERSITY CHOICE PERCEPTION Case Study: “The Game of Your Life” by Özyeğin University). Master of Science in Information Technology, *IŞIK UNIVERSITY.*
- Frith, J.** (2013). Turning life into a game: Foursquare, gamification, and personal mobility. *Mobile Media & Communication*, 1(2), 248-262.
- Ferreira, A.T., Araújo, A.M., Fernandes, S., Miguel, I.C.,** (2017). Gamification in the workplace: A systematic literature review. In: Rocha, Á., Correia, A.M., Adeli, H., Reis, L.P., Costanzo, S. (Eds.), *Recent Advances in Information Systems and Technologies.* Springer International Publishing, Cham, pp. 283–292. [https://doi.org/10.1007/978-3-319-56541-5\\_29](https://doi.org/10.1007/978-3-319-56541-5_29).
- Fredrickson, B. L. and Losada, M. F.** (2005). Positive affect and the complex dynamics of human flourishing. *The American Psychologist*, 60: 678–686. [[Crossref](#)], [[PubMed](#)], [[Web of Science ®](#)], [[Google Scholar](#)].
- Frijda, N. H.** (1994). “Varieties of affect: Emotions and episodes, moods, and sentiments”. In *The nature of emotion: Fundamental questions*, Edited by: Ekman, P. and Davidson, R. J. 59–67. New York, NY: Oxford University Press. [[Google Scholar](#)].
- Garrison, D. R., Anderson, T., & Archer, W.** (2010). The first decade of the community of inquiry framework: A retrospective. *The Internet and Higher Education*, 13(1), 5-9. doi: 10.1016/j.iheduc.2009.10.003.
- Gable, P. A. and Harmon-Jones, E.** (2008). Approach-motivated positive affect reduces breadth of attention. *Psychological Science*, 19: 476–482. [[Crossref](#)], [[PubMed](#)], [[Web of Science ®](#)], [[Google Scholar](#)]
- Gee, J.** (2007). *What video games have to teach us about learning and literacy.* New York, NY: Palgrave MacMillian.
- Hon and Lui,** (2016). Employee creativity and innovation in organizations *International Journal of Contemporary Hospitality Management*, 28 (5), pp. 862-885.
- Hosseini, C., Haddara, M.,** (2020). Gamification in enterprise systems: a literature review. *Proc. Future Technol. Conf. (FTC) 2019 (2)*, 552–562. [https://doi.org/10.1007/978-3-030-32523-7\\_39](https://doi.org/10.1007/978-3-030-32523-7_39).
- Hamari, J., Koivisto, J., Sarsa, H.,** (2014). Does gamification work? A literature review of empirical studies on gamification. *IEEE 3025–3034.* <https://doi.org/10.1109/HICSS.2014.377>.

- Hamari, J., Koivisto, J.,** (2015). Why do people use gamification services? *Int. J. Inf. Manag.* 35,419431. <https://doi.org/10.1016/j.ijinfomgt.2015.04.006>.
- Hamel, Gary.** (2007), "The future of management. Boston: Harvard Business School Press"
- Hayek, M.** (2012). Control beliefs and positive psychological capital: Can nascent entrepreneurs discriminate between what can and cannot be controlled? *Journal of Management Research*, 1(1), 23-33.
- Heinrich, W. F., & Rivera, J. E.** (2016). A framework for PLA in traditional higher education: Experiential learning assessment for embedded outcomes. *PLA inside out* (5).
- Hussainzada, A., & Colleagues.** (2010). *Evaluation of the organizational creativity relationship with organizational commitment*. Tehran.
- Hobfoll, S. E.** (2002). Social and psychological resources and adaptation. *Review of General Psychology*, 6(4), 307–324.
- Iten, N., & Petko, D.** (2016). Learning with serious games: Is fun playing the game a predictor of learning success? *British Journal of Educational Technology*, 47(1), 151-163. doi:10.1111/bjet.12226.
- Internet: Martins, E., & Terblanche, F.** (2003). Building organizational culture that stimulates creativity and innovation. *European Journal of Innovation Management*, 6(1), 64-74. doi: <https://doi.org/10.1108/14601060310456337>.
- Internet: Zhang, X., & Bartol, K. M.** (2010). Linking empowering leadership and employee creativity: The influence of psychological empowerment, intrinsic motivation and creative process engagement. *Academy of Management Journal*, 53(1), 107. Retrieved from <http://www.jstor.org/stable/25684309>.
- Internet: Hacker, Stephen; Roberts, Tammy.** (2004). *Transformational Leadership- Creating Organizations of Meaning*. American Society for Quality (ASQ). Retrieved from <http://gen.lib.rus.ec/book/index.php?md5=44FF3EF329406B72C853F9A7044B4BC0>.
- James, K., Brodersen, M. and Eisenberg, J.** (2004). Workplace affect and workplace creativity: A review and preliminary model. *Human Performance*, 17(2): 169–194. [[Taylor & Francis Online](#)], [[Web of Science](#)®], [[Google Scholar](#)].
- K. Kunie, N. Kawakami, A. Shimazu, Y. Yonekura, Y. Miyamoto,** (2017). The relationship between work engagement and psychological distress of hospital nurses and the perceived communication behaviors of their nurse managers: a cross-sectional survey *Int. J. Nurs. Stud.*, 71, pp. 115-124.
- Kapp, K. M.** (2012). What is Gamification? Davis, M., & Zelenko, M (Eds.), *The gamification of learning and instruction.: Game-based methods and strategies for training and education* San Francisco, CA: Pfeiffer. Kipp Columbus (2018) Home page, Retrieved from <http://www.kippcolumbus.org/>.
- Keys, B., & Wolfe, J. (1990).** Management games and simulations. *Journal of Management*, 16(2), 307-336. doi:<https://doi.org/10.1177/014920639001600205>



- Kiryakova, G., Angelova, N., & Yordanova, L.** (2014). Gamification in education. Proceedings of 9th International Balkan Education and Science Conference.
- Kim, M. K., Kim, S. M., Khera, O., & Getman, J.** (2014). The experience of three flipped classrooms in an urban university: An exploration of design principles. *The Internet and Higher Education*, 22, 37-50. doi: 10.1016/j.iheduc.2014.04.003.
- Koepp, M. J., Gunn, R. N., Lawrence, A. D., Cunningham, V. J., Dagher, A., Jones, T., ... & Grasby, P. M.** (1998). Evidence for striatal dopamine release during a video game. *Nature*, 393(6682), 266-268.
- Kolb, A. Y., Kolb, D. A., Passarelli, A., & Sharma, G.** (2014). On becoming an experiential educator the educator role profile. *Simulation & Gaming*, 45(2), 204- 234.
- Kühn, S., Gleich, T., Lorenz, R., Lindenberger, U., & Gallinat, J.** (2014). Playing super mario induces structural brain plasticity: Gray matter changes resulting from training with a commercial video game. *Molecular Psychiatry*, 19(2), 265-271. doi:10.1038/mp.2013.120.
- Kessler E.H.** (2010) Motivating and Inspiring Others. In: Management Theory in Action. Palgrave Macmillan, New York. [https://doi.org/10.1057/9780230106024\\_7](https://doi.org/10.1057/9780230106024_7).
- Kozlowski SWJ, Klein KJ.** (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes. In *Multilevel Theory, Research and Methods in Organizations: Foundations, Extensions, and New Directions*, ed. KJ Klein, SWJ Kozlowski, pp. 3–90. San Francisco, CA: Jossey-Bass.
- Liebert, M.** (2008). Problematic usage among highly-engaged players of massively multiplayer online role-playing games. *CyberPsychology & Behavior*, 11(4). doi:10.1089/cpb.2007.0140.
- Luthans, F.** (2002). Positive organizational behaviour: Developing and managing psychological strengths. *Academy of Management Executive*, 16(1), 57–72.
- Luthans, F.** (2002b). The need for and meaning of positive organizational behaviour. *Journal of Organizational Behavior*, 23, 695–706.
- Luthans, F., Avolio, B.J., Avey, J.B., & Norman, S.M.** (2007). Positive psychological capital: measurement and relationship with performance and satisfaction. *Personnel Psychology*, 60(3), 541–572.
- Luthans F, Avolio BJ.** (2003). Authentic leadership: A positive development approach. See Cameron et al. 2003, pp. 241–58.
- Levesque R.J.R.** (2018) Intrinsic and Extrinsic Motivation. In: Levesque R.J.R. (eds) *Encyclopedia of Adolescence*. Springer, Cham. [https://doi.org/10.1007/978-3-319-33228-4\\_639](https://doi.org/10.1007/978-3-319-33228-4_639).
- Legault L.** (2020) Intrinsic and Extrinsic Motivation. In: Zeigler-Hill V., Shackelford T.K. (eds) *Encyclopedia of Personality and Individual Differences*. Springer, Cham. [https://doi.org/10.1007/978-3-319-24612-3\\_1139](https://doi.org/10.1007/978-3-319-24612-3_1139).
- Larson, K.,** (2020). Serious games and gamification in the corporate training environment: a literature review. *TechTrends* 64, 319–328. <https://doi.org/10.1007/s11528-019-00446-7>.

- Luthans, F., Avolio, B. J., Walumbwa, F., & Li, W.** (2005). The Psychological Capital of Chinese Workers: Exploring the Relationship with Performance. *Management and Organization Review*, 1(2), 247-269.
- Luthans F.** (2016). Positive organizational behavior and psychological capital. In *the Backstage of Major Discoveries in Organizational Behavior*, ed. F Bietry, J Creus-ier. London: Routledge. In press.
- Luthans, F., & Youssef, C. M.** (2007). Emerging Positive Organizational Behavior. *Journal of Management*, 33(3), 321-349.
- Luthans, Fred and Youssef-Morgan, Carolyn M.** (2017). "Psychological Capital: An Evidence-Based Positive Approach" *Management Department Faculty Publications*. 165.
- Luthans, F., Avey, J. B., Avolio, B. J., Norman, S. M., & Combs, G. M.** (2006). Psychological capital development: toward a micro-intervention. *Journal of Organizational Behaviour*, 27, 387-393.
- Luthans, F., Avolio, B. J., Walumbwa, F., & Li, W.** (2005). The Psychological Capital of Chinese Workers: Exploring the Relationship with Performance. *Management and Organization Review*, 1(2), 247-269.
- Martins, E., & Terblanche, F.** (2003). Building organizational culture that stimulates creativity and innovation. *European Journal of Innovation Management*, 6(1), 64-74. doi:<https://doi.org/10.1108/14601060310456337>.
- Martin, L. L., Ward, D. W., Achee, J. W. and Wyer, R. S. Jr.** (1993). Mood as input: People have to interpret the motivational implications of their moods. *Journal of Personality and Social Psychology*, 64: 317-326. [[Crossref](#)], [[Web of Science ®](#)], [[Google Scholar](#)].
- Malone, T. W.** (1981). Toward a theory of intrinsically motivating instruction\*. *Cognitive science*, 5(4), 333-369. doi:10.1207/s15516709cog0504\_2.
- McCormick, T.** (2013). Anthropology of an idea gamification. *Foreign Policy*, 201, 26- 27.
- Md. Karim Rabiul, Tan Fee Yean,** (2021). Leadership styles, motivating language, and work engagement: An empirical investigation of the hotel industry, *International Journal of Hospitality Management*, Volume92,102712,ISSN02784319,<https://doi.org/10.1016/j.ijhm.2020.102712>.(<http://www.sciencedirect.com/science/article/pii/S0278431920302644>)
- Medlin, B., & Faulk, L.** (2011). The relationship between optimism and engagement: the impact on student performance. *Res. In Higher Education Journal*, 13, 1-9.
- Mittal, S., & Dhar, R. L.** (2015). Transformational Leadership and employee creativity: Mediating role of Creativity self\_efficacy and moderating role of knowledge sharing. *Management Decision*, 53(5), 894.
- Michael Sailer , Jan Hense , Heinz Mandl and Markus Klevers** (2013) 'Psychological Perspectives on Motivation through Gamification', *Interaction Design and Architecture(s) Journal*, (19), pp. 28-37.

- M. Geldenhuys, K. Łaba, C.M. Venter**, (2014). Meaningful work, work engagement and organisational commitment SA J. Ind. Psychol., 40 (1).
- Mekler, E.D., Brühlmann, F., Opwis, K., Tuch, A.N.**, (2013). Do points, levels and leader-boards harm intrinsic motivation? An empirical analysis of common gamification elements. In: Proceedings of the First International Conference on Gameful Design, Research, and Applications- Gamification '13. Presented at the First International Conference, ACM Press, Toronto, Ontario, Canada, pp. 66–73. <https://doi.org/10.12583008.2583017>.
- Moghim, S. M.** (2012). *Organization and Management Research Approach*. Tehran: Tarma.
- Mujtaba, B. G. and Shuaib, S.** (2010), “An Equitable Total Rewards Approach to Pay for Performance Management”, *Journal of Management Policy and Practice*, Vol. 11(4), pp.111-21
- Nori, Anhar**, (2019). Impact of Employee Well-being and Psychological Capital on Creativity, master of science in management and organization in the department of social science, Ankara Yildirim Beyazit University.
- Othman, N., & Nasurdin, A. M.** (2011). Work Engagement of Malaysian Nurses: Exploring the Impact of Hope and Resilience. *World Academy of Science, Engineering and Technology*, 5(12), 391-395.
- Oldham, G. R. and Cummings, A.** (1996). Employee creativity: Personal and contextual factors at work. *Academy of Management Journal*, 39: 607–634. [Crossref], [Web of Science®], [Google Scholar].
- Peterson SJ, Luthans F, Avolio BJ, Walumbwa FO, Zhang Z.** (2011). Psychological capital and employee performance: A latent growth modeling approach. *Personnel Psychology*; 64: 427-450.
- Petersen K.** (2015). Authentic leadership and unit outcomes: additive and interactive contributions of climate and psychological capital. PhD Thesis, Bellevue Univ., Bellevue, Neb.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.-Y., Podsakoff, N.P.**, (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J. Appl. Psychol.* 88, 879–903. <https://doi.org/10.1037/0021-9010.88.5.879>.
- Podsakoff, P.M., MacKenzie, S.B., Podsakoff, N.P.**, (2012). Sources of method bias in social science research and recommendations on how to control it. *Annu. Rev. Psychol.* 63, 539–569. <https://doi.org/10.1146/annurev-psych-120710-100452>.
- Promand, Z.** (2008). *Develop and Rehabilitation of Transformational Leadership* (3 ed.). Tehran: Jangal Jawedana.
- Roy, D.** (1954). Efficiency and “the fix”: Informal intergroup relations in a piecework machine shop. *American Journal of Sociology*, 60(3): 255–266.
- Roy, D.** (1953). Work satisfaction and social reward in quota achievement: An analysis of piecework incentive. *American Sociological Review*, 18(5): 507–514.
- Reeves, B., & Read, J. L.** (2009). Total engagement: using games and virtual worlds to change the way people work and businesses compete: 274. *Cambridge, MA: Harvard Business Press.*

- Rutter, M.** (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57(3), 316-331.
- Renee Baptiste, N.** (2008). Tightening the link between employee wellbeing at work and performance: A new dimension for HRM. *Management Decision*, 46(2), 284-309.
- Rego, A., Machado, F., Leal, S. and Cunha, M. P.** (2009). Are hopeful employees more creative? An empirical study. *Creativity Research Journal*, 21(2/3): 223–231. [Taylor & Francis Online], [Web of Science ®], [Google Scholar].
- Reiter-Palmon, R. and Illies, J. J.** (2004). Leadership and creativity: Understanding leadership from a creative problem-solving perspective. *Leadership Quarterly*, 15: 55–77. [Crossref], [Web of Science ®], [Google Scholar].
- Robert J. Sternberg** (2006) 'The Nature of Creativity', *Creativity Research Journal*, 18(1), pp. 87-98.
- Rosas, R., Nussbaum, M., Cumsille, P., Marianov, V., Correa, M., Flores, P., . . . López, V.** (2003). Beyond Nintendo: Design and assessment of educational video games for first and second grade students. *Computers & Education*, 40(1), 71-94. [https://doi.org/10.1016/S0360-1315\(02\)00099-4](https://doi.org/10.1016/S0360-1315(02)00099-4).
- Rezeyan, D. A.** (2012). *Basics of Organizational Behavioural Management* (13 ed.). Tehran: Human Science Research and Development Center.
- Rankin, Y., Gold, R., & Gooch, B.** (2006). 3d role-playing games as language learning tools. *Eurographics*, 25(3).
- Rosser, J., Lynch, P., Cuddihy, L., Gentile, D., Klonsky, J., & Merrell, R.** (2007). The impact of video games on training surgeons in the 21st century. *Arch Surgery*, 142, 181-186. doi:10.1001/archsurg.142.2.181.
- Stajkovic, A. D., & Luthans, F.** (1998b). Social Cognitive Theory and Self-Efficacy: Going Beyond Traditional Motivational and Behavioral Approaches. *Organizational Dynamics*, 26(4), 62-74.
- Sailer, M., Hense, J.U., Mayr, S.K., Mandl, H.,** (2017). How gamification motivates: an experimental study of the effects of specific game design elements on psychological need satisfaction. *Comput. Hum. Behav.* 69, 371–380. <https://doi.org/10.1016/j.chb.2016.12.033>.
- Schreiber, J.** (2016). *Motivation 101*. New York: Springer Publishing Company.
- Skinner, B. F.** (1969). Contingency management in the classroom. *Education*, 90(2), 93. Skinner, B. F. (1985). Cognitive science and behaviourism. *British Journal of Psychology*, 76(3), 291. Retrieved from <https://doi.org/10.1111/j.2044-8295.1985.tb01953.x>.
- Skinner, B. F.** (2012). The Experimental analysis of behavior. *American Scientist*, 100(1), 54. Study Stack (2019) [www.Studystack.com](http://www.Studystack.com).
- Shea, P., & Bidjerano, T.** (2009). Community of inquiry as a theoretical framework to foster “epistemic engagement” and “cognitive presence” in online education. *Computers & Education*, 52(3), 543-553. doi: 10.1016/j.compedu.2008.10.007.
- Shalley, C. E. and Gilson, L. L.** (2004). What leaders need to know: A review of social and contextual factors that can foster or hinder creativity. *Leadership Quarterly*, 15(1): 33–53. [Crossref], [Web of Science ®], [Google Scholar].

- Snyder, C. R.** (2002). Hope theory: rainbows in the mind. *Psychological Inquiry*, 13(4), 249-275.
- Snyder, C. R., Irving, L., & Anderson, J.R.** (1991). Hope and health: measuring the will and the ways. In C.R. Snyder & D.R. Forsyth (Eds.), *Handbook of social and clinical psychology: the health perspective* (pp. 285-307). Elmsford, NY: Pergamon Press.
- Spreitzer, G. M.** (1995). Psychological empowerment in the workplace: Dimensions, measurement and validation. *Academy of Management Journal*, 38(5), 1442.
- Silic, M., Marzi, G., Caputo, A., Bal, P.M.,** (2020). The effects of a gamified human resource management system on job satisfaction and engagement. *Hum. Resour. Manag. J.* 30, 260–277. <https://doi.org/10.1111/1748-8583.12272>.
- Schell, J.** (2008). *The Art of Game Design: A book of lenses*: 520. Burlington, MA: Morgan Kaufman Publishers.
- Salen, K.** 2004. *Rules of Play: Game Design Fundamentals*: 672. Cambridge, MA: MIT Press.
- Smith G.P.** (2004) Accumbens Dopamine is a Physiological Correlate of the Rewarding and Motivating Effects of Food. In: Stricker E.M., Woods S.C. (eds) *Neurobiology of Food and Fluid Intake. Handbook of Behavioral Neurobiology*, vol 14. Springer, Boston, MA. [https://doi.org/10.1007/0-306-48643-1\\_2](https://doi.org/10.1007/0-306-48643-1_2)
- Snyder, C.R.** (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry*, 13(4), 249–275.
- Seligman, M.E. P.** (1998). *Learned optimism: How to change your mind and your life*. Get Abstract.
- Suh, A., Cheung, C.M.K., Ahuja, M., Wagner, C.,** (2017). Gamification in the workplace: the central role of the aesthetic experience. *J. Manag. Inf. Syst.* 34, 268–305. <https://doi.org/10.1080/07421222.2017.1297642>.
- Sternberg, R. J., Kaufman, J. C., & Pretz, J. E.** (2001). The propulsion model of creative contributions applied to the arts and letters. *Journal of Creative Behavior*, 35(2), 75–101.
- Sternberg, R. J., Kaufman, J. C., & Pretz, J. E.** (2002). *The creativity conundrum*. New York: Psychology Press.
- Sternberg, R. J., Grigorenko, E. L., Ferrari, M., & Clinkenbeard, P.** (1999). A triarchic analysis of an aptitude—treatment interaction. *European Journal of Psychological Assessment*, 15(1), 1–11.
- Sternberg, R. J.** (1999). *Handbook of Creativity*. New York: Cambridge University Press.
- Squire, K.** (2011). *Video games and learning: Teaching and participatory culture in the digital age*. New York, NY: Teachers College, Columbia University.
- Towne, T. J., Ericsson, K. A., & Sumner, A. M.** (2014). Uncovering mechanisms in video game research: suggestions from the expert-performance approach. *Frontiers in psychology*, 5. doi: <http://dx.doi.org/10.3389/fpsyg.2014.00161>.
- Toril, P., Reales, J. M., Mayas, J., & Ballesteros, S.** (2016). Video game training enhances visuospatial working memory and episodic memory in

- older adults. *Frontiers in Human Neuroscience*, 10. doi:10.3389/fnhum.2016.00206.
- Vaughan, S.** (2015). 2015 Instructional design trends compass: Calling IDs to action. *Instructional Design*. Retrieved from <http://elearningindustry.com/2015-instructional-design-trends-compass-calling-ids-action>.
- Von Ahn, L., & Dabbish, L.** (2006). Games with a purpose. *Computer*, 51(8): 58–
- Watson, D., Clark, L., & Tellegen, A.** (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6): 1063–1070.
- Washington Sales do Monte, Elis Regina Monte Feitosa, Mércia Cristiley 345 Barreto Viana, Alexsandra Bezerra da Rocha, Robelius De-Bortoli** (2019) 'Gamification as a Process Class: The Dialectic of user Interaction', *International Journal of Advanced Engineering Research and Science (IJAERS)*, 6(10), pp. 2349-6495(P) | 2456-1908(O)[Online]. Available at: <https://dx.doi.org/10.22161/ijaers.610.17> (Accessed: Oct- 2019).
- Warmelink, H., Koivisto, J., Mayer, I., Vesa, M., Hamari, J.,** (2020). Gamification of production and logistics operations: status quo and future directions. *J. Bus. Res.* 106, 331–340. <https://doi.org/10.1016/j.jbusres.2018.09.011>.
- Wormeli, R.** (2003). *Day one & beyond*. Westerville, OH: National Middle School Association.
- Wormeli, R.** (2006). *Fair isn't always equal*. Westerville, OH: National Middle School Association.
- Woodman, R. W., Sawyer, J. E. and Griffin, R. W.** (1993). Toward a theory of organizational creativity. *Academy of Management Review*, 18: 293–321. [Crossref], [Web of Science ®], [Google Scholar].
- Wren, Daniel A.** (2005), “The evolution of management thought”, (5th edition), New York: John Wiley & Sons, Inc.
- Youssef, C. M., & Luthans, F.** (2007). Positive Organizational Behavior in the Workplace: The Impact of Hope, Optimism, and Resilience. *Journal of Management*, 33(5), 774-800.
- Youssef-Morgan CM.** 2014. Advancing OB research: An illustration using psychological capital. *J. Leadersh. Organ. Stud.* 21:130–40.
- Zare, H., & Frozunda, L.** (2008). *Creativity, Problem Solving and Strategic Thinking* (1 ed.). Tehran, Tehran: Payam Noor University.
- Zhang, X., & Bartol, K. M.** (2010). Linking empowering leadership and employee creativity: The influence of psychological empowerment, intrinsic motivation and creative process engagement. *Academy of Management Journal*, 53(1), 107. Retrieved from <http://www.jstor.org/stable/25684309>.
- Zhou, J. and George, J. M.** (2001). When job dissatisfaction leads to creativity: Encouraging the expression of voice. *Academy of Management Journal*, 44(4): 682–696. [Crossref], [Web of Science ®], [Google Scholar].
- Zimmerman, E., & Salen, K.** (2005). *The Game Design Reader: A Rules of Play Anthology*: 954. Cambridge, MA: The MIT Press.

## **APPENDIX**

**APPENDIX A** Foreign Language Anxiety Scale

**APPENDIX B** Ethical Approval Form

## **APPENDIX A Questionnaire**

### **Questionnaire**

Thank you for taking the time to participate in this questionnaire!

As part of my MBA research thesis at the Istanbul Aydin University, Istanbul, I am conducting a survey that evaluates the mediating effect of gamification on the impact of psychological capital on employees creativity in Bahrain.

This questionnaire was developed for an investigation about the impact of Psychological capital on employees creativity under the mediating effect of Gamification, it is designed to find out the outcomes of Psychological capital on employees creativity Private companies in Bahrain. The collected responses will be analyzed and used in a masters of business administration. None of the data will be shared with others, the questionnaire is completely blind. This questionnaire consists of four sections, (33) questions and (3) pages. The first section is about respondents demographical information,. The second section is about (Habitica Usage) and the third & Forth sections explain about your abilities, capabilities and characteristics.

Your participation will be greatly appreciated and your responses are important for the student to gain a better understanding of daily challenges the administration encounters.

Thank you for participating and feel free to ask any question!

Email Add: sarah\_emadeldin@outlook.com

Phone No: 0097334512417.

Please write or tick (√) the appropriate response to each of the statements.



**Section (A): Psychological Capital: -**

**Psychological Capital's Scale: -**

1	2	3	4	5	6
strongly disagree	moderate disagree	slightly disagree	slightly agree	moderately agree	strongly agree

1	“If i ever got myself into a bind at work, I might come up with a number of solutions.”	1	2	3	4	5	6
2	“At the moment, I consider myself to be a fairly good employee.”	1	2	3	4	5	6
3	“I may conceive of a number of approaches to achieving my new job objectives.”	1	2	3	4	5	6
4	“I’m not sticking to the goals, I’ve set for myself at work.”	1	2	3	4	5	6
5	“I have the choice of working “on my own” if i so like.”	1	2	3	4	5	6
6	“I typically take situations at work that are frustrating in stride.”	1	2	3	4	5	6
7	“I know how to get through tough times at work because I’ve been there before.”	1	2	3	4	5	6
8	“In terms of my career, I still want to see the bright side of things.”	1	2	3	4	5	6
9	“In terms of jobs, I am hopeful about what will happen to me in the future.”	1	2	3	4	5	6
10	“In meetings with executives, I am assured in representing my job field.”	1	2	3	4	5	6
11	“I feel confident contributing to discussions about the company’s strategy”.	1	2	3	4	5	6
12	“I feel confident presenting information to a group of colleagues”.	1	2	3	4	5	6

**Section (B): Creativity: - Scale ( 1) Not at all characteristic – (5) Very characteristic**

13	“I propose novel approaches to achieving goals or objectives.”	1	2	3	4	5
14	“I come up with fresh and realistic performance-enhancing ideas.”	1	2	3	4	5
15	“I am constantly on the lookout for emerging technology, system, methods, and/or product concepts.”	1	2	3	4	5
16	“I am still looking for new opportunities to improve quality.”	1	2	3	4	5
17	“I will provide you with a lot of new ideas.”	1	2	3	4	5
18	“I don’t like taking chances.”	1	2	3	4	5
19	“I champion and encourage other people’s ideas.”	1	2	3	4	5
20	“When granted the chance, I use my imagination on the job.”	1	2	3	4	5
21	“I create appropriate preparations and schedules for putting new ideas into action.”	1	2	3	4	5
22	“I’m still coming up with fresh and creative ideas.”	1	2	3	4	5
23	“When faced with a dilemma, i come up with innovation solutions.”	1	2	3	4	5
24	“I frequently take a novel approach to problems.”	1	2	3	4	5
25	“I propose new methods of carrying out job ideas.”	1	2	3	4	5

## APPENDIX B Ethical Approval Form

Evrak Tarih ve Sayısı: 02.04.2021-9139



T.C.  
İSTANBUL AYDIN ÜNİVERSİTESİ REKTÖRLÜĞÜ  
Lisansüstü Eğitim Enstitüsü Müdürlüğü

Sayı : E-88083623-020-9139  
Konu : Etik Onayı Hk.

Sayın Sara Emad Eldin Ahmed Aly

Tez çalışmanızda kullanmak üzere yapmayı talep ettiğiniz anketiniz İstanbul Aydın Üniversitesi Etik Komisyonu'nun 01.04.2021 tarihli ve 2021/04 sayılı kararıyla uygun bulunmuştur.  
Bilgilerinize rica ederim.

Dr. Öğr. Üyesi Alper FİDAN  
Müdür Yardımcısı

Dağıtım:  
Sayın Dr. Öğr. Üyesi Alper FİDAN  
Sayın Ecehan ŞİMŞEK  
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Sayın RAED KAMHIA  
Sayın ZINEB IDDOUTE  
Sayın Ayşe Meriç YAZICI  
Sayın Sümeyra TİRYAKİ

Bu belge, güvenli elektronik imza ile imzalanmıştır.

Belge Doğrulama Kodu : BSE31F05B3 Pin Kodu : 03982

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### **Education:**

2008-2012 Higher technological institute- Business Administration Department

2013-2013 Ain shams universtity – Pre- Master year Human Resources Department

2019-2021 İstanbul Aydın University-MBA, Business Administration Department

### **Work Experience:**

2012-2014 Higher Technological Institute- Lecturer Asisstant

2014-2016-Square E for electrical insustrial- HR Manager

2016-2019 –Premax Trading and Services - Project Manager

### **Languages:**

-Turkish: Arabic

-English: Advanced

### **Skills:**

-Team-work oriented – Written and verbal skills – Creativity – Flexibility – Research and analytical skills- Motivated – Conflict resolution

- Computer skills ( Microsoft Office, Social Media, Google Docs, Google drive, Adobe Illustrator, Adobe Photoshop, Adobe InDesign, Internet user )