Gamification for Sustainability

An experts' perspective on the opportunities and challenges of gamification as a tool to foster sustainability practices within organisations

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Abstract

Gamification and sustainability are two topics that have gained a lot of attention in the past few years, both from the corporate sector and the academic community. Yet, the connection between the two concepts has seldom been made. This study addresses this research gap, by presenting the novel concept of gamification and connecting it to established theories in the field of organisational change. It then creates a discussion around the question of the potential of gamification as a tool to foster sustainability practices within organisations.

To answer this question, this thesis followed a qualitative research design. By performing semi-structured interviews with experts in the field of gamification, the study explored different aspects of gamification, namely its definition, the opportunities and challenges it faces in regards to sustainability, the organisation's responses towards the concept and the hypotheses for the further development of gamification.

The results of this study suggest that gamification has great potential to foster sustainable practices within organisations. With its element of fun, gamification has the power to engage employees in sustainability issues, create a deeper understanding of the topic and relate it directly to the employees' personal values and decision-making process. By offering different perspectives and helping employees see the bigger picture, gamification can inspire a sense of meaningfulness and contribution to something bigger than oneself. However, this can only happen when the tools are designed and used in the right way. Building an understanding of the user and implementing the fitting game design elements to create an impactful experience for the player is, however, a complex and time-consuming process, and therefore put forth as one of the biggest challenges. Furthermore, gamification should strive to expand beyond the commonly used game design elements of points, badges and leaderboards to tap into the user's intrinsic rather than extrinsic motivation.

Key words: Gamification, game design elements, sustainability, organisational culture change, employee engagement, value alignment, behaviour change.

1. Introduction

1.1. Background

In recent years, gamification has gained increased attention. Companies begin to realise that by gamifying certain processes, activities can become more fun and engaging. As a result, more companies start to explore gamification as a tool to motivate employees and customers and improve the user experience (Nacke & Deterding, 2017). This thesis presents the novel concept of gamification, connects it to established theories in the field of organisational change, and explores gamification's potential to serve a sustainability purpose from the point of view of gamification experts.

Gamification can be defined as "the use of game design elements in non-game contexts" (Deterding et al., 2011, p. 10). It is used as a tool to serve a purpose outside of the game that has validity on itself, for example employee engagement or value alignment within organisations. Gamification is a young concept built upon old rooted psychological theories such as self-determination theory (e.g. Deci & Ryan, 1985) and behaviourism (e.g. Skinner, 1938). It is believed to have the potential to motivate players through game design elements, by offering meaningful choices, feedback, and autonomy (Werbach, 2020). In the last decade, this novel tool gained enormous interest and is emerging in business practice (Robson et al., 2015). It is being adopted by large established organisations more often, resulting in a growing recognition of gamification and its value. Organisations around the world have begun to use gamified elements to engage their customers and employees in more sustainable practices (Robson et al., 2015). However, to understand the potential of gamification in the context of sustainability, it is important to first understand the necessity for corporate sustainability, the cultural change needed to achieve it and the mechanics and principles that make gamification a useful tool to facilitate it.

Due to accelerating climate change, globalisation, and rapid development in technology, sustainability is a concept that is currently receiving a lot of attention, both on an individual level and in the organisational context. There are a lot of different understandings and definitions of sustainability, but they always seem to agree on meeting the needs of the current generation without compromising the ability of future generations to meet theirs, as stated in the Brundtland report (WCED, 1987). Sustainable development is often described as considering the triple bottom line, referring to the three pillars of *environment, society, and economy.* All three pillars should be considered and represented in the decision-making and actions taken by an organisation. This means that organisations must not only think about their financial profit, but also about their influence on the environment and society by actively trying to do good (Elkington, 1998). Today's society is built upon organisations (Barley, 2010). We spend most of our time in organised settings, which influences our decisions and actions. The organisations' impact on our daily lives also shows their power to make a change. Nowadays, organisations increasingly become aware of that power and have started to acknowledge the responsibility that comes with it and the impact they have on society and the planet (Tolbert & Hall, 2015). These companies recognise the need for a change in how they do business and tackle this challenge by integrating sustainability principles into existing structures, goals, and strategies (Baumgartner, 2009; Narayanan & Adams, 2017; Parisi, 2013). However, it is argued that in order for corporates' sustainability efforts to efficiently affect the core business, the sustainability mindset needs to be integrated in the organisational culture (Baumgartner, 2009; Bertels et al., 2010; Crane, 1995).

Evidently, sustainability is a complex matter that requires major changes in organisations (Narayanan & Adams, 2017). It cannot be approached as any other organisational change and the challenges differ based on the industry, stakeholders, spatial complexity, and the size of the organisation (Etzion et al., 2017). Furthermore, top-down approaches, such as changes in structures, goals, and strategies often lack the engagement of employees and middle-managers (Baumgartner, 2009; Lozano, 2013). These are in most cases the people that have to adapt and align their work functions to meet the sustainability objectives. However, they often lack the necessary understanding, communication, and stimuli towards the matter. As a result, these organisational changes fail to change the core of organisations, namely their organisational culture (Baumgartner, 2009; Etzion et al., 2017; Lozano, 2013). A sustainability culture stresses the importance of environmental and social issues next to economic factors and has the ability to guide its members' decisions and behaviours in a sustainable way (Bonn & Fisher, 2011). Firms that successfully integrate sustainability in their core activities and programs are those that foster a sustainability culture (Bonini & Bové, 2014). The challenge, however, lies in changing the existing organisational culture towards one that holds the value of sustainability. Consequently, employee behaviour change should be seen as an integral part of an organisation's efforts to create more sustainable business practices (Greene et al., 2014; Haugh & Talwar, 2010). When employees and organisations hold different beliefs and attitudes regarding sustainability, it can create conflict and hinder the process of change towards sustainability (Greene et al., 2014). To overcome this problem, it is crucial to build an alignment between the employees' perceptions and values, and the organisation's values and sustainability strategy. Therefore, to fully embed sustainability into the core of their business operations, companies need to change their organisational culture in order to create a common understanding and shared value of sustainability within their organisation (Bertels et al., 2010).

Gamification could be the means to address the challenges that come from this change process. Companies such as Workz, InsertCoin, or WeSpire offer digital gamification programs to help businesses strengthen their company culture and motivate their employees to engage in corporate (sustainability) practices. For example, with WeSpire's gamified tool employees can set up their own profile, join a team and choose sustainability projects that are going on in the company. They can keep track of their progress, share their experiences with co-workers and receive recognition which leads to a sense of purpose and fulfilment (WeSpire, n.d.). Figure 1 and 2 display an employee's personal profile. Highlighted in yellow are some of the game design elements that are often used in gamified tools such as (1) the person's score or point system as well as a progress bar showing their development, (2) the badges they earned which are visual representations of their achievements, and (3) the leaderboard which shows the ranking of the employee's performance in comparison to their peers. These three components are often referred to as the PBL triad (standing for **P**oints, **B**adges and **L**eaderboards) and have proven to cover a wide range of applications in the corporate world reaching from customer and employee engagement to behaviour change (Robson et al., 2015).
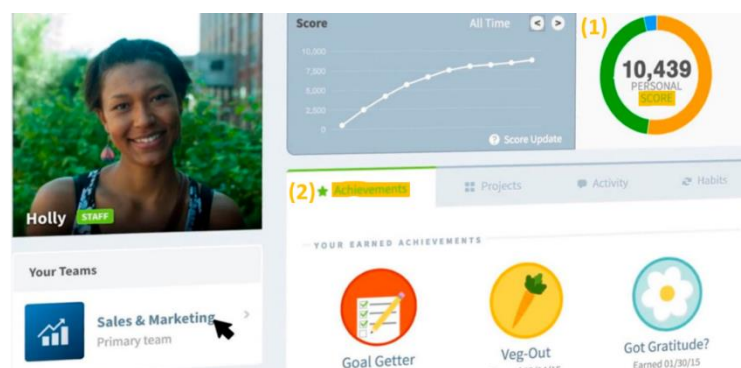

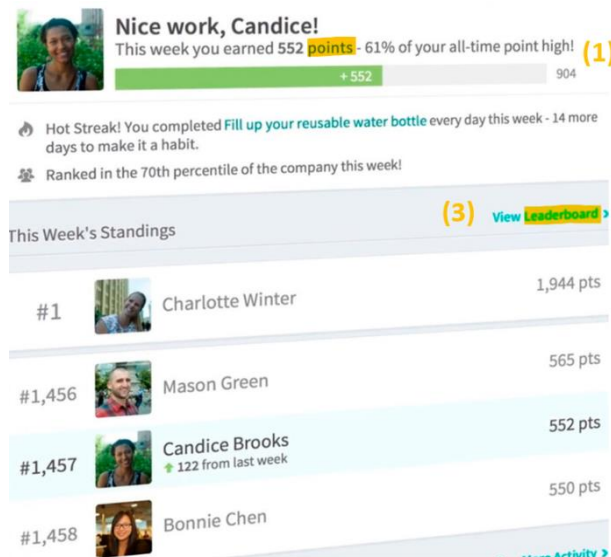*Figure 1: Example of a gamified tool (WeSpire, n.d.)*

Figure 2: Example of a gamified tool (WeSpire, n.d.)

This promises great opportunity for sustainability. With its character of making something more fun and captivating, gamification offers a new approach to employee engagement. Furthermore, using gamification to provide the employees with information and supporting them in learning about sustainability issues can help to bring them on board of the organisation's sustainability mission and align their personal values with the organisation's.

This thesis explores the potential of gamification as a tool to foster the integration of sustainability practices within organisations from the perspective of gamification experts. For this research, gamification experts are described as individuals who work or have been working for companies that develop and distribute gamification tools and are therefore believed to have a solid knowledge on the topic.

1.2. Problem Definition, Aim and Research Questions

In recent years, both sustainability and gamification have gained increased attention from businesses. An increasing amount of companies seem willing to use gamified elements as a tool to pursue their sustainability strategies and goals (Robson et al., 2015). Currently, many organisations use basic gamification design elements such as points, badges, and leaderboards (the aforementioned PBL triad) to engage their customers and employees (in sustainability) by making people compete and rewarding the ones that perform best. The application Vampire Hunters, for example, allows employees to identify "vampires" at work which are products that waste energy (e.g. old light bulbs, devices in standby mode). For each vampire found, the participants get points awarded, representing the energy they saved, and are ranked in a scoreboard (Kumar & Herger, 2020). However, as pointed out by Werbach (2020), many studies have shown that leaderboards and game design elements based on competition can also have a demotivating character and make people less willing to engage. On the other hand, gamification can also provide fun and engaging activities for employees to learn about sustainability challenges, helping them to understand how this relates to their personal and professional life and challenging their values. Yet, there appears to be a lack of understanding regarding the potential of gamification that reaches beyond the PBL (Robson et al., 2015) which could help organisations reach their sustainability goals, not just on a superficial level, but by making it an integral part of their organisational culture and values.

To address this gap, this research aims to explore gamification as a tool to drive sustainability practices within organisations and connects it to valid theories from the field of organisational change. By taking on the perspective of those who work or worked for companies developing gamification tools for sustainability and employee engagement, this thesis identifies the opportunities and obstacles for gamification for sustainability from the experts' point of view and describes where they see the potential of it. This will help build an understanding of which possibilities gamification offers in driving organisational change for sustainability. Therefore, this thesis addresses the research question:

From the perspective of gamification experts, what is the potential of gamification as a tool to foster sustainability practices within organisations?

Derived from the main research question five sub-questions were formulated.
Sub-question 1: *How do gamification experts **define** the concept of "Gamification"?*

Sub-question 2: *Where do gamification experts see the **opportunities** of gamification for fostering sustainability practices within organisations?*

Sub-question 3: *Where do gamification experts see the **challenges** of gamification for fostering sustainability practices within organisations?*

Sub-question 4: *What is the gamification experts' perception of **organisations' responses** to gamification?*

Sub-question 5: *How do gamification experts imagine the **future of gamification** (in an organisational context of sustainability)?*

1.3. Layout

The thesis first presents the previous research (2.1.) in the fields of organisational change and gamification. Second, section 2.2. displays the theoretical and conceptual foundations relevant to the research questions. It highlights the organisational culture change needed to effectively integrate sustainable practices within organisations and proposes the value alignments approach as a solution on how organisations can address this challenge (2.2.1.). Section 2.2.2. places gamification in the context of sustainability and focuses on its potential to motivate behaviour change (for sustainability). The methodology and methods section (3.) describes the research design, as well as the techniques and methods used for the empirical data collection and analysis. It reveals the motivations for the methodological choices made, addresses questions of validity and reliability, and lays out the potential limitations of the study. Section 4. sums up the research data from the gamification experts' perspective gathered by semi-structured interviews. This shows the perceptions and experiences of gamification experts regarding the opportunities and obstacles of gamification for sustainability. The collected data is connected to the relevant theories and literature and interpreted in the analysis chapter (5.). Lastly, the discussion and conclusion section (6.) shows the key findings of the research and takes a critical look at the research process.

2. Previous Research and Theoretical Framework

This research aims to connect rooted theories from the field of organisational change with the newer concept of gamification. It is therefore crucial to establish the foundation upon which this paper builds its theoretical framework. Section 2.1. presents a literature review on organisational change, with a focus on organisational culture and values, and then presents academic content from the field of gamification. Section 2.2. comprises the theoretical framework relevant in this research and that will be used to answer the research questions.

2.1. Previous research

2.1.1. Organisational Change

In a world characterised by globalisation, market competition and environmental challenges, organisations must be proactive and agile when adapting to the changes in their environment to survive (Burnes & Jackson, 2011; Hay et al., 2020). Especially when looking at sustainability challenges, it becomes clear that a radical change towards sustainability at an organisational level is needed (Narayanan & Adams, 2017). We live in a society of organisations (Barley, 2010). They have an immense impact on society and the environment (Narayanan & Adams, 2017). By some, their responsibility in achieving environmental sustainability is believed to be greater than that of governments and consumers (Dunphy et al., 2007). Today, companies increasingly acknowledge this responsibility and aspire to change towards more sustainable business practices (Tolbert & Hall, 2015). However, organisational change is difficult and has been deemed as "undoubtedly one of the most complex and important endeavours in modern organisational life" (Nag et al., 2007, p. 844).

In the past, a lot of emphasis has been placed on the external dimensions of organisations and the changes influencing the internal dimensions have often been overlooked (Branson, 2007). However, in the last 20 years, academic researchers and organisational leaders have started to direct their attention to the previously neglected concept of organisational culture and its importance in the change process (Alvesson & Sveningsson, 2015; Branson, 2007). In fact, a big part of the contemporary research on organisational change considers organisational culture to be a key element of change (Alvesson & Sveningsson, 2015). Some authors suggest that ignoring the aspects of organisational culture often ends with a failure of planned change efforts (e.g. Alvesson & Sveningsson 2015; Balogun & Johnson, 2004). In line with this, Beer (2000) argues that organisational change needs to address the patterns of behaviour that are blocking the organisation from higher performance by diagnosing their consequences and identifying the underlying assumptions and values that have created it. In other words, the underlying assumptions and values guide the behaviour that is central in a change process. To change this behaviour, one must first understand the values and beliefs that are at the core of it. Alvesson and Sveningsson (2015) agree, stating that "unless culture, at a minimum, is seen as an integral part of change, efforts at the latter will fail" (p. 4).

When it comes to sustainability, it is this fundamental transformation that we need to see in organisations (Baumgartner, 2009; Narayanan & Adams, 2017). Like other change efforts, the transition towards sustainability is a difficult and complex endeavour. When integrating sustainability, it is important that companies not only focus on pushing sustainability principles in their strategy and agenda setting, but also recognise the changes needed in their organisational culture (Baumgartner, 2009; Etzion et al., 2017; Lozano, 2013). Nevertheless, this change is crucial for the organisation if they want to truly implement sustainability practices throughout their entire organisation and not just have it as a symbolic key word in their mission statement.

Therefore, this thesis follows the argument that in order to fully embed sustainability into the core of their business operations, companies must change their organisational culture.

Organisational Culture and Values

The concept of organisational culture emerged in the 1970s and 1980s and quickly became an influential concept in management research and practice. Despite many controversies and disagreements around the concept, organisational culture is typically viewed as a dynamic learning process which evolves and develops over time (Linnenluecke & Griffiths, 2010; Schein, 1984). Edgar Schein, one of the most influential scholars on the topic, defines organisational culture as

the pattern of basic assumptions that a given group has invented, discovered, or developed in learning to cope with its problems of external adaptation and internal integration, and that have worked well enough to be considered valid, and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems. (1984, p. 3)

According to Schein (1984; 1990), organisational culture can be analysed on three distinct levels (as represented in Figure 3). On the surface level lies the observable culture or *artifacts*. It comprises the most tangible and visible elements of culture, such as visible organisational structures, processes, and behaviours. The second level refers to the *espoused values*. They are the goals, norms, standards, and philosophies within the culture. On the third level lie the basic *underlying assumptions*. They are unconscious beliefs that determine perceptions and thought processes and form the source of value and behaviour. Deeply embedded assumptions usually start out as values but gradually become internalised and taken for granted until transforming into assumptions that are no longer questioned or discussed (Schein, 1984; 1990; see also Linnenluecke & Griffiths, 2010).
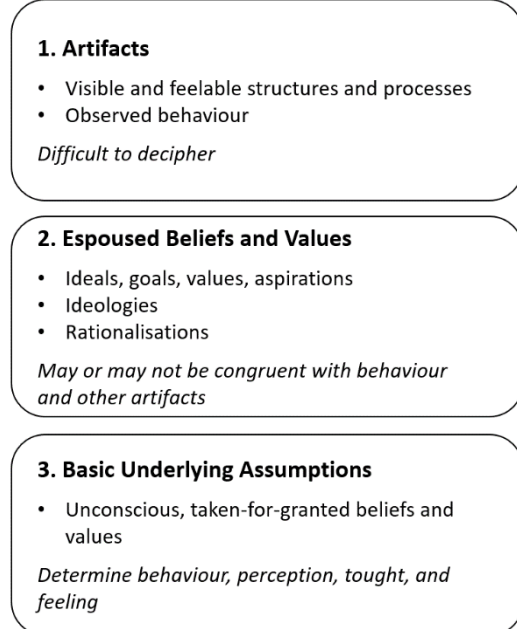
1. Artifacts
- Visible and feelable structures and processes
- Observed behaviour

Difficult to decipher

2. Espoused Beliefs and Values
- Ideals, goals, values, aspirations
- Ideologies
- Rationalisations

May or may not be congruent with behaviour and other artifacts

3. Basic Underlying Assumptions
- Unconscious, taken-for-granted beliefs and values

Determine behaviour, perception, tought, and feeling

Figure 3: Schein's levels of culture (elaborated from Schein, 2010, p. 24)

In agreeance with Schein, Buono and his colleagues (1985) highlight the notion of shared beliefs and expectations about the organisational life that is central to the concept of organisational culture. By having these shared values, beliefs and expectations, organisational culture draws organisational members together and establishes a sense of cohesion (Cartwright & Cooper, 1993). Organisational culture is said to have a significant influence on the behaviour of every member within the organisation (Trice & Beyer, 1993). Having this strong influence on individual and group behaviour, organisational culture affects practically all aspects of the organisational life, ranging from people's interactions with each other to the decisions made within the organisation and the pursued strategies (Buono et al., 1985).

Values, ideologies, and beliefs are considered essential for understanding an organisation's culture. It is therefore not surprising that many scholars analysing organisational cultures have focused on organisational values (e.g. Bernal et al., 2018; Linnenluecke & Griffith, 2010; Sullivan et al., 2001). The values have a profound influence on the behaviour of the members of an organisation (Bernal et al., 2018). Collins and Porras (1998) define organisational core values as "the organization's essential and enduring tenets — a small set of general guiding principles" (p. 73). Both on an individual and organisational level, values serve two important functions: they are the primary driver of motivation and they define which behaviour is acceptable and whether or not organisational goals and actions are judged as appropriate or right (Bernal et al., 1985; Chatman & Barsade, 1995; Sullivan et al., 2001). Gagliardi (1986) describes the values as "the idealization of a collective experience of success in the use of a skill and the emotional transfiguration of previous beliefs" (p. 123). It is through this idealisation process that beliefs become values and that the rational acceptance of beliefs changes into an emotional identification with the values. Gagliardi (1986) also describes the origin of organisational values, structured in four phases. In the first phase, the leader of a newly created

organisation establishes a vision (i.e. a set of beliefs) which works as a reference point to judge how objectives are defined, and how tasks are completed. While not all members of the organisation may share the same values in the beginning, the leader has some power to orient their behaviour in the desired direction. If the behaviour, oriented by the beliefs of the leader, achieves the desired results, the belief confirmed by experience is likely to be shared by more and more members of the organisation in the second phase. Once the belief has proven validity, and the members of the organisation feel reassured and gratified by the achievement of the desired results, the organisation turns its focus from the effects towards the cause. Hence, in the third phase, the effects provoked by a behaviour become secondary. Meanwhile, the cause gains more value as something desirable and important for the members. At this point, the organisation no longer fights for the effects, but for the cause. In the fourth phase, members of the organisation stop being consciously aware of the value, which is now shared by all, unquestioned and taken for granted, and automatically dictating the member's behaviour. This stage is comparable to Schein's third level of organisational culture, where the value becomes an underlying assumption (Schein, 1984).

2.1.2. Gamification

Unlike the field of organisational change, research on gamification is still at its infancy. Nacke and Deterding (2017) describe the evolution of gamification research in three waves. The first wave of gamification research was dedicated to its definition, frameworks, and taxonomies. The second wave described the systems, designs, and architectures. Finally, the third wave focused on the effect of gamified systems on the user experience. While articles on the topic of gamification were initially published in many different disciplines, it now seems to evolve into its own cross-disciplinary field (Nacke & Deterding, 2017). When it comes to gamification for sustainability, there is an abundance of non-scientific articles on the topics, which shows the interest from the business perspective. However, the scientific articles on gamification with a focus on sustainability are scarce as only a few peer-reviewed articles have been published (Perryer et al., 2016; Robson et al., 2016). This thesis aims to contribute to this lack of research by exploring the potential of gamification for sustainability from the perspective of gamification experts. To do so, the following literature review first presents the concept of gamification and situates it in relation to similar concepts. Furthermore, different game design elements are described, and the aspects of fun, motivation and behaviour change are discussed.

Defining and Situating Gamification

Since long, businesses have used game-like incentives to motivate their employees and customers (e.g. the competition between financial traders, the leaderboards for salespeople or even employee-of-the-month awards). However, it has always been hard to scale up the increase of engagement and rewarding of desired behaviour with such incentives (Robson et al., 2015). Furthermore, firm's use of game-like experiences to influence behaviour has previously "neither sought to learn from formal game design principles, nor been labelled gamification" (Robson et al., 2015, p. 412). Now, with advancements in digital technologies and the appearance of social media, businesses turn traditional processes into deeper and more engaging game-like experiences to influence their employees' and customer's behaviour (Alsawaier, 2017; Robson et al., 2015). The term 'gamification' originated from the digital media industry and was first used in the year 2008. It was, however, not broadly adopted until 2010, but is now arguably institutionalised as a common term in the field (Deterding, et al., 2011; Robson et al., 2015). Due to its novelty, there is no consensus on the definition of gamification in literature (Alsawaier, 2017). One of the simplest and most wide-spread definitions describes gamification as *"the use of game design elements in non-game contexts"* (Deterding et al., 2011, p. 10). Other authors define the concept as "the application of game features, mainly video game elements, into non-game context for the purpose of promoting motivation and engagement in

learning" (Alswaier, 2017, p. 56) or "using game-based mechanics, aesthetics, and game thinking to engage people, motivate action, promote learning, and solve problems" (Kapp, 2012, p. 66). It is noticeable, that these definitions add the elements of motivation and engagement as possible effects of gamification. This thesis uses a combination of the aforementioned definitions to describe gamification as the application of game design elements in non-game contexts to engage people and motivate action or learning.

McGonigal (2011) described the power of games as follows: "A good game is a unique way of structuring experience and provoking positive emotion. It is an extremely powerful tool for inspiring participation and motivating hard work" (p. 33). Using game design elements, gamification as a motivational tool has the power to engage and motivate people by evoking positive emotions, such as fun. On top of that, by integrating social aspects, surprising elements, meaningful choices, a sense of progression, and instant feedback loops in non-game contexts gamification is believed to have the potential to change behaviour. The aim of gamification can be described as threefold: external, internal, and behaviour change. External aims are for example used for marketing purposes or to enhance the consumer experience. Internal aims are focused on the organisation itself, e.g. knowledge transfer or productivity enhancement. Lastly, behaviour change, this is a matter of changing people's pattern of behaviours and creating habits for example towards sustainability (Werbach, 2020).

To unravel the meaning of gamification, it is important to make a clear distinction between *play* and *game*. *Play,* also referred to as *paida,* is described as an expressive, free, and improvisational form of combining behaviours. It is an energetic way of letting go and behaving in an unprescribed enjoyable way. *Game* or *ludus* stands for a structured, rule-based and goal-oriented way of playing. Which means that it still includes enjoyable and energetic behaviour but in a structured manner and challenged for a prescribed objective or outcome (Caillois, 2001). Based on that, the most common definitions of games agree that a game is characterised by interconnected rules and challenges emerging from pursuing a goal that the player is trying to overcome in order to succeed (Juul, 2005). There are four traits that define all games: *a goal, rules, feedback systems* and *voluntary participation.* The *goal* is the ultimate outcome the players try to achieve, it provides the players with a sense of purpose and guides their actions. The *rules* limit the ways of achieving the *goal* by removing the obvious ways of getting to the goal. Rules tempt to unleash creativity and foster strategic thinking because players have to explore new and different possibilities. The *feedback system* shows players how close they are to achieving the goal, for example in the shape of a point system or levels. It serves to show that the goal is achievable and thus has a motivating character. Finally, the *voluntary participation* of players entails that every player knows and willingly accepts the rules, goal, and feedback. This creates a common ground and gives the activity a safe and pleasurable character (McGonigal, 2011; Suits, 1978). Therefore, Suits (1978) describes playing a game as "the voluntary attempt to overcome unnecessary obstacles." (p. 38).To make the distinction between gamification and related concepts as mentioned earlier clearer, Deterding et al. (2011) define and situate gamification on two axes (see Figure 4). The first axis focuses on the distinction between *play* and *game*, as mentioned above (distinction between *paida* and *ludus*). The second axis differentiates between *whole* and *parts*, referring to either a fully-fledged game design or only using design parts and components. Gamification and gamified contexts are characterised by solely incorporating game design elements in a non-game context. This differentiates gamification from concept such as serious games, which are fully-fledged game designs. The clear boundary between a 'full game' and 'a set of integrated game elements' is however disputed and often blurry. Whether someone 'plays' or 'uses' an application depends on the focus and perception of the individual.
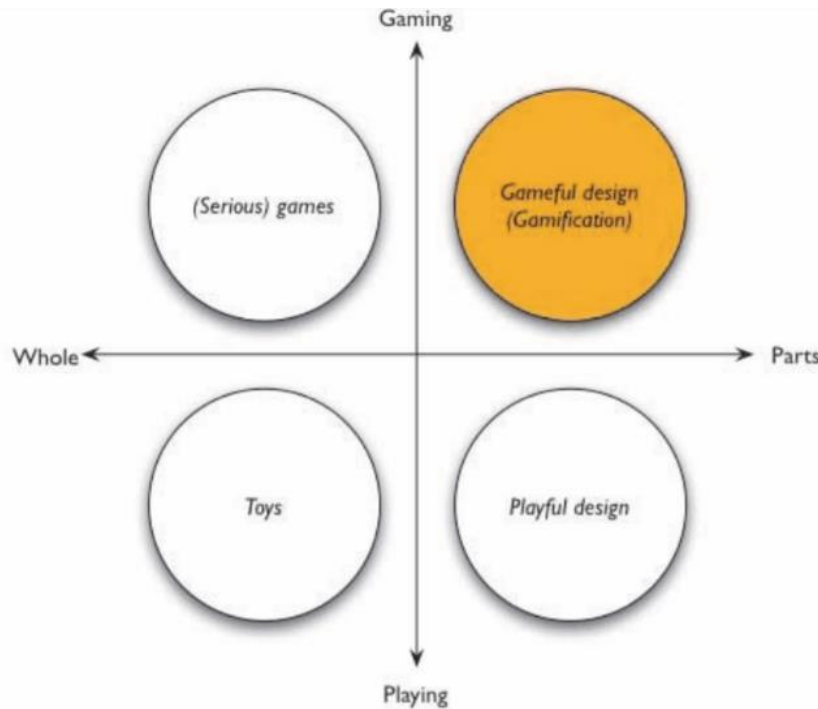
Figure 4: Defining gamification (Deterding et al., 2011)

Game Design Elements

Game design elements can be seen as the toolbox for building a game and include all elements that are characteristic to games. They are the regular patterns found in games that play a significant role in the gameplay (Deterding, et al., 2011). The most common and used game design elements are points, badges, and leaderboards, also known as the PBL triad. They are concrete, understandable, and relatively easy to integrate into non-game contexts. It is, however, a misunderstanding that these are the only or most effective elements and they cannot be considered as gamification on their own. Oversimplification and misunderstanding of the potential of the PBL triad can have negative effects on the engagement and experience of players. For example, implementing a leaderboard in the workplace that rewards employees for certain behaviour will most likely motivate the top ten players, but demotivate all others because it represents failure and low chances of reaching the top. (Kim & Werbach, 2016). On the other hand, the thoughtful implementation of game design elements has the potential to implicate desired values in games, for example, by modifying the controller of a video game into a giant joystick that must be controlled by multiple people (e.g. two people controlling the joystick and two jumping the buttons). This changes the activity from an individual focus on the screen to a collective effort where interaction with one another is required, creating a joyous and energetic experience (Belman et al. 2011).

Another way to look at game design is through the lens of the MDA framework (Hunicke et al., 2004), which describes three levels within game design: *Mechanics, Dynamics and Aesthetics*. *Mechanics* are the concrete game elements like the rules or the goals of the game. They are determined by the designer and remain the same for all players (Robson et al., 2016). *Dynamics* are the player behaviours or interactions of the players with the game elements and with each other, for example cheating or bluffing. The *Aesthetics*, sometimes referred to as *Emotions* (Robson et al., 2016) are the emotional responses that the game system evokes in the players, such as disappointment or excitement (Hunicke et al., 2004; Robson et al., 2016). Each level of the framework can be seen as a lens to look through at the game. The framework also highlights two different perspectives to look at the game system namely, the designer's perspective and the players perspective (see Figure 5). From the designer's perspective, the dynamics rise from mechanics and lead to certain aesthetics.

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The player, on the other hand, first experiences the aesthetics that come from the observable dynamics and underlying mechanics. For the designing process, it is important to look from both perspectives to see what effect small changes on one level will have on other levels and the overall experience. The MDA framework supports an iterative approach to designing and tuning games for desired behaviour, by thinking about games as designed artefacts that interact with each other in systems (Hunicke et al., 2004). Deterding (2015) also describes an iterative designing process, following several steps and repeating them to come to the final desired behaviours.
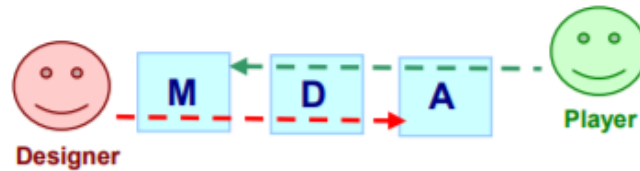

Figure 5: MDA framework perspectives (Hunicke et al., 2004)

2.1.3. Fun, Motivation and Behaviour Change

As stated before, gamification aims to make non-game contexts more engaging through implementing fun and thus motivating people to work towards certain goals or outcomes by using the aforementioned game design elements.

The concept of fun is one of the aspects that distinguishes gamification from other tools and generates this motivating character that makes us want to face challenges and keep on playing. Fun can be defined as "what provides amusement or enjoyment, specifically: playful often boisterous action or speechful of fun" (Merriam-Webster, n.d.). Typically, fun is associated with enjoyment, pleasure, and a positive experience. To make the concept of fun more graspable, Csikszentmihalyi (1988) explored the nature and conditions of enjoyment and studied a phenomenon he refers to as *flow*. Experiencing *flow* is an intense and joyous feeling of satisfaction and excitement over creative performance and high-quality functioning (Csikszentmihalyi, 1988). Some of the characteristics of flow-state are: intense focus and concentration on the activity, the feeling that time passes faster than normal and experiencing an activity as intrinsically rewarding. These are characteristics that can be related to the concept of 'fun', and that people tempt to seek. Activities that tempt to induce this feeling of *flow* are challenging activities with a clear goal, set rules and most importantly: done for enjoyment rather than rewards or obligation. *Flow* is most reliably and efficiently produced in environments that offer the possibility for self-chosen goals, optimised obstacles or challenges, and continuous feedback, which perfectly fits the definition of a game. Nakamura and Csikszentmihalyi (2005) state that a flow experience has the power to expand an individual's interest and goals or improve skills and understanding of already existing interests. Through stimulating game characteristics and implementing this element of fun, gamification is believed to have the potential to motivate and engage players (Hamari & Koivisto, 2015).

Motivation is a deeply rooted and complicated psychological concept, primarily driven by people's values (Chatman & Barsade, 1995; Sullivan et al., 2001). Values are an important aspect of this research and are closely connected to organisational culture change and the value alignment approach (as explained in section 2.1.1. and 2.2.1.). Therefore, this paper looks at the cognitivist perspective, studying what it is that motivates certain behaviour. The self-determination theory by Deci and Ryan (1985; 2000) is a well-established motivational theory that succeeds to elaborate on the cognitivist perspective, by making the distinction between *intrinsic* and *extrinsic* motivation. An *intrinsically* motivated person does something because of pleasure or personal aims. Instead of doing something to get a reward or to satisfy others, they will do something because they judge it as interesting or enjoyable. Intrinsic motivation is fed by the feeling of competence, autonomy, and relatedness. In

other words, people are more likely to be intrinsically motivated when they feel skilled, in control and experience a sense of contribution to something bigger than themselves (Deci & Ryan, 1985). Extrinsic factors require people to do things they are not necessarily intrinsically motivated for. An *extrinsically* motivated person will fulfil a task because of external outcomes that depend on it, such as the receiving of a reward or punishment. Extrinsic motivators are most likely only effective until the desired outcome is achieved (Perryer et al., 2016). Gamification with its various game elements, has the potential to create both extrinsic and intrinsic motivation for players by implementing reward and punishment systems or satisfy intrinsic needs, like desired successes. The goal is to create the optimal environment for intrinsic motivation to occur, by constantly considering the desired feelings of competence, autonomy, and relatedness. This can be done by offering optimised challenges, freedom of meaningful choices and constructive feedback mechanisms, which ultimately lead to a reward or credits for effort and skills. On an individual level this creates pleasure, commitment for the task, perseverance, creative problem solving, high level of satisfaction and a feeling of pride and skill by achieving the goals (Deci & Ryan, 2000; Stevens, 2013).

Robson et al. (2015) suggest that gamification can lead to behaviour change when tapping into key motivational drivers in two ways: reinforcements and emotions. First, both positive and negative reinforcements encourage the repetition of a behaviour (Robson et al., 2015). This is most easily explained with the operant conditioning theory of Skinner (1938) which describes how a stimulus can lead to a behaviour which leads to a consequence. The consequence on its term can lead to a repetition of the behaviour or revised behaviour. The feedback of the consequence can be considered learning. Consequently, behaviour can be influenced by a stimulus through either reinforcement or punishment of actions. Gamification connects to that by using game elements, such as instant feedback loops, to actively influence the behaviour of players (Deterding, 2015). The use of badges or levelling up to reward the player's actions or the loss of points to punish them, are good examples. Emotions are another powerful motivator for behaviour change (Higgins, 2006). To be most effective, "the emotions in a gamified experience should be fun-oriented and appealing, not only on a pragmatic level, but also on an emotional level" (Robson et al., 2015, p. 416). The authors describe successful gamification as one that implies the repetition of desired outcomes. Repeatedly reinforcing a desired behaviour by providing stimuli to elicit a certain behaviour and rewarding it can lead to the formation of a habit (Duhigg, 2012).

Connecting that to the idea of organisational culture, which heavily relies on the concept of values, the question remains whether, and if so how, gamification relates to internal values and aspires to change them in order to establish a long-term sustainability mindset in the players. In the gamification and behaviour analysis research, this question has rarely (if ever) been addressed and thus the connection between gamification and values is unclear. This thesis aims at addressing this connection by investigating how gamification experts perceive and attend to this issue.

It is important to note, that a process should not be gamified simply for the sake of gamification itself (Robson et al., 2016). Instead, it should be driven by clear goals that can be financial, social, or environmental. A well-designed gamification experience should include reinforcements whether positive or negative, but goes beyond that by offering optimised challenges, feedback loops, and goals. When focusing on a goal it is important to ensure that mechanics, dynamics, and aesthetics do not conflict or offset each other; being aware that every element is interconnected and influences the whole. The aim is to create a mix of emotions and rewards resulting in a satisfying outcome for the player that ultimately leads to behaviour change and the formation of new habits (Robson et al., 2015).

2.2. Theoretical Framework

2.2.1. Organisational Culture Change and Value Alignment for Sustainability

As stated previously, organisational change and organisational culture change is hard. Research has shown that many failed organisational change efforts stem from ignoring the importance of organisational culture change (e.g. Doppelt, 2009). It is proposed, that employees are more likely to be committed to change, when the change intervention and the way it is managed is congruent with their individual values, their work group's values and the organisation's values (Bernal et al., 2018). Thus, the proposed framework for successful change interventions for sustainability used in this thesis is the approach of value system alignment.

The first person to draw attention to the relationship between value alignment and successful change is Kurt Lewin in the 1940s (as explained by Benne, 1976). He developed the ethical-participative approach to change, stating that people could not be tricked or forced into change, but would only fully commit to it if they saw that it was right. Lewin argued, that for behaviour change to be successful, the individual or group needs to be given the opportunity to reflect on and learn about their situation and change of their own free will (Lewin, 1947; see also Burnes, 2004).

In change management literature, the focus is often placed on the leaders, who are expected to carefully nurture and manage the human resources within the organisation, focusing on elements of commitment, empowerment, trust, teamwork, and participation. Over the past decades, people working in organisations are increasingly desiring a feeling of meaningfulness and fulfilment from their work (Kinjerski & Skrypnek, 2006). People experiencing personal purpose and meaning at work are believed to be more committed to the organisation (Milliman et al., 2003; Sullivan et al., 2001) - they want to "work for a cause, not just for a living" (Branson, 2007, p. 377). Gautam et al. (2004) refer to the relationship between the employee and the organisation as an affective organisational commitment, which, by Van Knippenberg and Sleebos (2006), is described to lead to "an emotional attachment to, identification with, and positive involvement in the organisation" (p. 573). This in turn influences the employee's attitudes and behaviours (Branson, 2007). Fundamental to the concept of affective organisational commitment is the "growing awareness of the need to nurture and accommodating consciousness within each employee by cultivating alignment between his/her values and those that underpin the success of the organisation" (Branson, 2007, p. 380). Creating an alignment between organisational and individual values is considered having a strong impact on the positive attitude of employees, including organisational commitment, motivation, and job satisfaction (O'Reilly et al., 1991; Sullivan et al., 2001).Value-aligned organisations, are described as being

> passionate about what they do, their work is meaningful to them, they are clear about what they stand for, they genuinely care about their people, and they insist on creating a work environment and culture that brings out the best in everyone. (Henderson & Thompson, 2003, p. 57)

These organisations understand the impact and power of values on people, performance, and outcomes and work to create alignment between the organisational and employee values (Branson, 2007).

However, value alignment is not a naturally occurring outcome, but a planned process. Branson (2007) describes two actions necessary for organisations to achieve value alignment. First, there is the need of a "deliberate values clarification procedure" (p. 382). Second, there needs to be a means that encourages each person to proactively support the application of the set values in their everyday organisational behaviours. Value-aligned organisations thus follow a "deliberate and comprehensive

organisational values clarification and alignment process" (p. 382). Adding to this, Sullivan et al. (2001) suggest, that employees must be presented with the opportunity to emotionally and intellectually engage with the organisation's values to develop a shared understanding of them.

In recent years, the value system alignment approach has gained increased attention from researchers, especially connected to sustainability. It is suggested that successful culture change for corporate sustainability is largely dependent on the underpinning values and beliefs of an organisation's culture and that these in turn affect how sustainability is implemented within the organisation (Linnenluecke & Griffiths, 2010).While the research on how to embed sustainability in organisational culture is still limited, an increasing amount of authors recognises the importance of developing a sustainability culture to support and drive an organisation's sustainability efforts (Davis & Boulet, 2016). Greene et al. (2004) advocate for employee behaviour change to be understood as an integral part of an organisation's effort to create more sustainable business practices. However, it is not uncommon, that employees and organisations hold differing views and beliefs regarding sustainability, which leads to conflict and hinders the process of change towards sustainability (Greene et al., 2014). Instead of implementing change efforts that are in line with either the employee or the organisation's attitudes, it is necessary to create an alignment between the employee's perceptions and values and the organisation's values and strategy for sustainability (Bernal et al., 2018; Greene et al., 2014). This is especially challenging, in cases where the change interventions directly challenge deeply rooted traditional values. In these cases, it is necessary to create and gain acceptance for a new system of meanings and values (Gagliardi, 1986).

The approach of value alignment is in line with the argument that organisations will have to undergo significant transformation and cultural change and ideally develop a sustainability-oriented organisational culture (Crane, 1995; Linnenluecke & Griffiths, 2010). A sustainability culture can be defined as

> one in which organizational members hold shared assumptions and beliefs about the importance of balancing economic efficiency, social equity and environmental accountability. Organizations with strong cultures of sustainability strive to support a healthy environment and improve the lives of others while continuing to operate successfully over the long term. (Bertels et al., 2010, p. 10)

Consequently, organisations attempting to transition towards sustainability need to change their organisational culture and its values. To do so, they need to "understand the values which underpin people's beliefs and ensure that their organisation has or can adopt values which align with sustainability and these beliefs" (Bernal et al., 2018, p. 646). In other words, organisations must undergo the value alignment process by clarifying their values and at the same time understanding their employees' values. Giving their employees the opportunity to engage with the organisation's values of sustainability can help them to understand and connect with these values and creates a shared understanding of the importance of sustainability to the company (Bernal et al., 2018). Considering gamification's potential to make an activity fun and engaging, it is possible to imagine that this tool can be used to lead employees on the journey of discovering their organisation's sustainability values, understand them and connect with them in a deeper way. However, the impact of gamification on the player's value has rarely (if ever) been addressed by research in the field.

2.2.2. Gamification for Sustainability

Both gamification and sustainability are concepts that have gained increased attention over the last few decades, especially from corporates (Fors & Lennerfors, 2016). While companies become

increasingly interested in changing their business operation towards more sustainable practices various authors stress the importance of engaging the employees in the organisation's sustainability mission and goals (Bertels, 2010; Davis & Boulet, 2016; Doppelt, 2009). This is why Susan Stevens, founder and CEO of WeSpire, is convinced that the interest in gamification will grow in the future. According to her, "digital sustainability engagement programs will become a core program for any responsible, innovative company" (Stevens, 2013, p. 601). Many scholars agree with her, predicting the growth of a billion-dollar market in workplace gamification and even speculating that gamification will lead to a change on how work is conceptualised (Burke & Hiltbrand, 2011; Nacke & Deterding, 2017; Perryer et al., 2016; Wünderlich et al., 2020).

Academic findings suggest that "games and gamified systems have motivational potential for workplaces" (Perryer et al., 2016, p. 328) and there are some similarities that can be drawn between the concept of playing a game and addressing sustainability issues in a work context. For instance, both rely on working with a fixed set of rules to achieve a specific objective. This requires engagement by the participant, as well as learning and problem-solving skills. Game design elements like challenges and group actions can motivate collaboration and collective problem-solving, all of which are essential when tackling sustainability issues. Immediate feedback is another important aspect of gamification that helps to either positively reinforce appropriate behaviour or facilitate learning and adjustment of negative behaviour (Perryer et al., 2016). By applying game design techniques, employers can add an element of fun to assigned work tasks. It is this element of fun that makes gamification engaging, and effective, triggering re-engagement and motivating continuous behaviour change (Deci & Ryan, 2000; Stevens, 2013). Nevertheless, there are also some obstacles to consider when using gamification in a work context. For instance, it is still unclear what the motivational properties are that make individuals wanting to play games in a workplace context. A challenge in the workplace stems from the assumption, that there are participants that may not be intrinsically motivated or interested in interacting with gamified elements. Consequently, imposing 'play' on employees, i.e. imposing gamification as a top-down approach to reach managerial goals such as sustainability goals, is less likely to have the same outcomes on productivity improvements than when it is done by intrinsic motivation (Perryer et al., 2016). As mentioned in the section on game design elements (section 2.1.2.), some of the most used components for gamification in a work context are points, badges, and leaderboards. However, these elements are usually used to create some sort of competition among the different players. This element of competition has been criticised by some, who argue that introducing unnecessary competition "will not only fail to engage non-competitive personalities … but will undermine the cooperation required for knowledge workers to solve complex business problems" (Perryer et al., 2016, p. 331). It has therefore been suggested that gamification (for sustainability) proves to be more effective when promoting cooperation instead of competition (Perryer et al., 2016). It is also important to keep in mind, that gamification may not be suitable for everyone, and that employees' responses to gamification can vary substantially depending on factors such as their attitude towards gamification, the purpose, relevance and type of the game, as well as the individual's motivation to participate (Perryer et al., 2016). A study by Robson et al. (2016) looked at different examples where gamification was used to motivate employee behaviour change. They found that gamification proved to be most successful when the gamification mechanics, dynamics and aesthetics/emotions were aligned with the player type. In contrast, gamification with a poor alignment between these gamification principles and the player resulted in gamification failures. The authors state that "understanding the desires and motivations of players is key to designing engaging gamified experiences" (Robson et al., 2016, p. 35).

The trend in utilising gamification to engage employees and reach corporate sustainability goals is not so surprising when looking at the capacities that are attributed to gamification. Much of the

literature accredits big potential to gamification, especially when it comes to motivate behaviour change (González et al., 2016; Perryer et al., 2016; Robson et al., 2016). Behaviour change is a very complex topic and cannot be elaborated in its full range within the framework of this thesis. Figure 6 illustrates a simplified approach to behaviour change and connects it to motivation and gamification to demonstrate how these different elements relate to each other in the context of this paper. Figure 6 shows the two types of motivation that gamification can appeal to in order to elicit behaviour changes which are external and internal motivation. Stimuli, such as rewards or punishments, can create an external motivation and evoke a desired behaviour. Repeated over time, thus reinforcing the behaviour, this can lead to a habitus (see section 2.1.3.). If not repeated, the behaviour is likely to go back to what it was before the interference of the stimuli (Kohn, 1999; Perryer et al., 2016). Another way for gamification to motivate behaviour change is by tapping into a person's intrinsic motivation. A change in behaviour that stems from intrinsic motivation is believed to have a more long-lasting effect than one that is provoked by extrinsic motivation (Fors & Lennerfors, 2016). However, generating intrinsic motivation is a challenging task (Nicholson, 2012; Wu, 2012 as cited in Fors and Lennerfors, 2016). Fors and Lennerfors (2016) believe that gamified applications that focus on extrinsic motivation and rewards have a chance to trigger intrinsic motivation when players can recognise an intrinsic value in the activity. To discover this intrinsic value players must often feel or see actual real-life benefits of their actions and efforts. In some cases, this can be accomplished rather easily, for instance when playing fitness applications players might discover the intrinsic value of exercising and stop requiring the application or rewards to work out. Gamified activities that aim towards sustainability, however, are less likely to provide the same type of tangible or visible results (Fors & Lennerfors, 2016). Based on the self-determination theory (Deci & Ryan, 1985) it is suggested that gamification can appeal to intrinsic motivation by creating a feeling of competence, autonomy, and relatedness where the participants feel skilled, in control, and experience a sense of contribution to something bigger than themselves. Other authors also name the introduction of meaningful choices, and the focus on flow as favourable aspects of gamification for sustainability (Fors & Lennerfors, 2016). Furthermore, intrinsic motivation is primarily driven by values which guide a person's behaviours and actions. People are likely to act and make decisions based upon their internalised values. A change in values results in a change of motivation and leads to a behaviour change (Sullivan et al., 2001; Deci & Ryan, 2000). However, whether gamification has the power to alter an individual's values remains unclear.
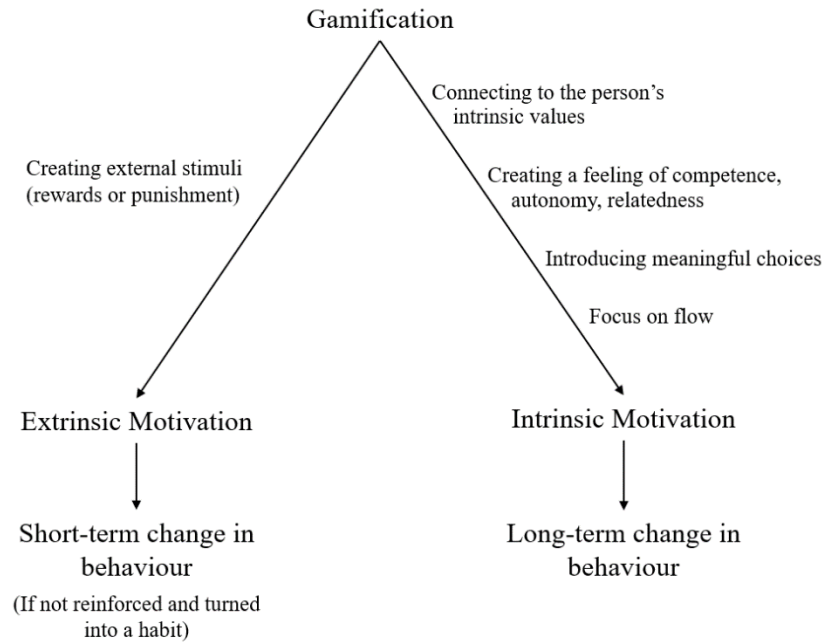
Figure 6: The link between gamification, motivation, and behaviour (own elaboration based on the literature mentioned in this paragraph)

In sum, gamification seems to have an enormous potential to motivate behaviour change. For corporates, gamification can be an effective tool to drive employee engagement to support their sustainability efforts (Perryer et al., 2016). Companies aspiring to develop a sustainability-oriented organisational culture can use gamification to help their employees understand and identify with their sustainability values. By thoughtfully implementing specific game elements - such as building a powerful narrative, sharing a vision, offering the freedom of meaningful choices, and providing positive feedback - gamification can create an experience, where the employees are motivated to emotionally and intellectually engage with and learn about the organisation's values (Perryer et al, 2016; Stevens, 2013). Ideally, this will lead to a shared understanding and an alignment of the sustainability values within the company. To do so, however, gamification needs to align with the existing tasks and sustainability objectives present in the organisation as well as be in line with the player type (Perryer et al., 2016; Robson et al., 2016).

3. Methodology and Methods

3.1. Methodology

This research used an exploratory approach to identify the potential (opportunities and challenges) of gamification in the context of organisational change for sustainability. This approach was used to "develop an initial rough description or, possibly, an understanding of some social phenomenon" (Blaikie, 2003, p. 11). Given the lack of current research looking at gamification from an organisational and sustainability perspective, the exploratory approach served to gain more insight into the topic from a new angle and lay a foundation for further study in this direction. The research however also touched upon a descriptive approach by looking at and describing the different game elements and designs, as well as their underlying foundational concepts. This provided a more detailed description of the characteristics of gamification and facilitated a deeper understanding of the use of gamification for sustainability purposes.

In order for this study to gain an understanding of gamification for sustainability, qualitative research was conducted. Qualitative research methods are used to get a deeper understanding of the topic at hand, by exploring the individual's perspective on it (6 & Bellamy, 2012; Silverman, 2014). It provides researchers with insights to the meanings that people attribute to their experiences (Silverman, 2014). The understanding and perception of experts in the field was shown through conducting semi-structured interviews, thus exploring the perspective of the interviewed experts.

The research at hand followed an inductive approach. Contrary to the deductive approach, which aims at falsifying or verifying a specific hypothesis, the inductive approach starts with a question. In the beginning, inductive research has no real idea of "what might turn out to be plausible, relevant or helpful about the subject of interest" (6 & Bellamy, 2012, p. 76). Over the course of the research, the researchers stayed open to new directions for the study and aimed to uncover the patterns that underlie the phenomenon of study to generate meaning.

3.2. Research Design
3.2.1. Methods of Data Collection

For the collection of primary data, this research relied on the qualitative research method of semi-structured interviews. The data resulting from these interviews was then transcribed and analysed in a systematic way by identifying recurring themes and concepts, extracting the relevant and valuable information for this research to answer the research questions.

Semi-structured interviews are a valued and common research method in the field of social sciences and are adaptable to different research questions and hypotheses. Their structure allows both practical and theory-driven questions, increasing the quality of the gathered data that is grounded in the experience of the interviewee (Galletta, 2013). The participants taking part in the interviews are considered "knowledgeable agents" (Gioia et al., 2012, p. 17), who are capable of telling their actions, thoughts, and intentions. Semi-structured interviews are "sufficiently structured to address specific dimensions of your research question while also leaving space for study participants to offer new meanings to the topic of study" (Galletta, 2012, p. 2). It constitutes a relatively open process that leaves space for the interviewees to give direction to the conversation. For reasons of validity and reliability, an interview guide for this study was constructed, consisting of 15 leading questions. All questions tied in with the research purpose and progressively led deeper into the topic of interest. The construction of the interviews was, however, slightly adjusted to the respective interviewee context to respect their different roles and backgrounds.

All interviews were hosted by both authors, following the same structure: opening, middle and conclusion segment (as proposed by Galletta, 2013, pp. 46-50). The involvement of both authors in the interviews assured that nothing got forgotten and provided the possibility for both authors to elaborate in the conversation to gather as much valuable data as possible. However, the interviews were led by one author to make sure the structure was clear, preventing confusing situations for the interviewee. The process of interviewing - when to ask follow-up questions, when to let the interviewee talk and when to bring them back to the relevant topic - requires time and trial and error. However, both researchers were familiar with the qualitative research techniques and experienced in conducting semi-structured interviews.

The participants for the semi-structured interviews were carefully selected and all considered experts in the field of gamification. For this study, gamification experts were defined as people who are or have been working for companies that develop and distribute gamification tools in the past two years and are therefore believed to have a solid knowledge on the topic. Considering the research questions, this research focused on experts with in-depth knowledge of gamification tools for sustainability and

daily interactions with organisations that use those tools, thus providing insights in the organisation's responses to gamification (conditional to answer sub-question 4). The experts' perspective was chosen because of available contacts and resources, but also to shed light on the topic of interest from a different angle. While the user experience appears to be the most obvious object of study in gamification research, this thesis looks at the topic from a different perspective.

The interviewed experts come from different companies and have different functions within the organisations which provides the research with a broad perspective on the topic of interest (see Table 1). Half of the interviewees are active in the same company based in Denmark (labelled as company X). The other interviewees are active in different companies based in Denmark, the Netherlands, Spain and Thailand which work with both national and international clients.

	Identification	Role/Background	Duration in minutes	Video
Table 1: Interviewee sample overview				
1.	Interviewee A	Co-founder (company X)	56	On
2.	Interviewee B	Sustainability research and product development (company X)	28	On
3.	Interviewee C	Sustainability research and product development (company X)	54	Off
4.	Interviewee D	Co-founder (company X)	59	On
5.	Interviewee E	Sales team, responsible for introducing the tool to companies	52	On
6.	Interviewee F	Senior consultant and sustainability lead	40	On
7.	Interviewee G	User experience designer	37	On
8.	Interviewee H	Sustainability research and product development (company X)	27	On
9.	Interviewee I	Board game and educational tool designer	44	On
10.	Interviewee J	Psychologist, game designer, leadership and organisational development	38	On

The interviews took place with one respondent at a time and had an emphasis on making a personal connection first to create trust and make both the interviewee and interviewers feel comfortable in the conversation, most likely leading to more open and honest answers. Due to the ongoing COVID-19 pandemic, all interviews were held and recorded via Zoom. This type of communication technology offers an audio-visual experience that imitates an in-person environment (Hanna, 2012). This simulated a face-to-face conversation and aimed at creating a comfortable environment with both verbal and non-verbal communication possibilities, whereas non-verbal communication in this situation was, however, somewhat limited. The interviews were conducted at different times between Monday and Friday, according to the working schedule of the interviewees and their availability. All interviews were conducted in the months of April and May and had a duration time between 30-60 minutes, depending on the conversation and the flow of the interviews. Because the interviews were semi-structured every interview was different. This is the strength of the method and does not make one interview more valuable than the other, instead all interviews are viewed as equally valuable. As suggested by Adams (2015) a mix of closed- and open-ended questions, accompanied by follow-up questions conducted in a comfortable and safe environment were used to investigate the meaning behind certain statements and dig deeper into experiences and the perceptions of the interviewees. This resulted in valuable data to explore the potential of gamification for sustainability from the experts' perspective.

3.2.2. Method of Data Analysis

Transcription

All conducted semi-structured interviews were transcribed, meaning that every conversation was written down with time indications and indications of who said what. Since the focus was put on what was said, rather than how something was said, filler words, pauses, and nonverbal expressions were not transcribed. Furthermore, the transcription was done in a confidential manner, where the interviewees were coded with A,B,C etc. and all information leading back to the organisations that the interviewees work for was changed or left out in a way that does not hinder the readability of the transcript. The transcripts served as a tool to simplify the process of analysing by offering an overview and the possibility to visualise themes and concepts in the document. This on its term led to a more thorough analysis and decreased the chances of missing out on important data.

Thematic Analysis

This research used thematic analysis to identify, organise, describe, and report certain themes found in the data set (Braun & Clarke, 2006). According to Braun and Clarke (2006) as well as King (2004), thematic analysis is a useful method to examine the perspectives of research participants on a topic of interest, highlight the similarities and differences in the data set, and generate unanticipated insights. Following the steps suggested by Braun and Clarke (2006), the researchers started by coding each of the interviews according to themes and concepts that helped to answer the research questions. The codes and themes emerged while analysing the documents, constituting a creative and iterative process, which is in line with suggestions by Nowell et al. (2017). Hence, instead of looking for specific, pre-set codes and themes, the authors focused on aspects that recurred and helped answering the research questions. This was done by each author separately and then brought together and compared. In a second step, the themes were connected to a broader pattern of meaning and reviewed to assure that they fit the data. Next, the themes were defined and named, and all codes and themes were visualised in a table filled out with supporting statements of the interviewees. Lastly, the themes were formed into a coherent narrative including quotes from the interviewees (presented in the findings, section 4.).

3.3. Reliability and Validity

Outlining the methodology of this research includes addressing the questions of reliability and validity. *Reliability* has to do with the degree "to which the findings of a study are independent of accidental circumstances of their production" (Silverman, 2014, p. 83). In other words, it assesses the reproducibility of the research results, referring to the degree to which the outlined procedures lead to the same results using the same or equivalent tools and conditions in different settings. A safe way to ensure reliability in qualitative research is through transparency of the research process. This can be accomplished by carefully describing the research strategy, methods used, and decisions made (Noble & Smith, 2015; Silverman, 2014). When conducting interviews, it is important for the interviewer to be aware of their impact on the setting and make efforts to minimise it. Pre-testing of the interview guide and training of the interviewers can be helpful in assuring that the participants will understand the interview questions in the same way and have a comparable set of interviews (Flick, 2007; Silverman, 2014).

Validity can be described as "the degree to which our statements approximate to truth" (6 & Bellamy, 2012, p. 21). It deals with the extent to which a used method actually measures what it was intended to measure. In qualitative research, one of the main issues of validity is the difficulty in differentiating between what has been studied and what has been assumed by the researcher. The aim is to avoid making assumptions, and instead base all findings and conclusions on the raw data. Hence, grounding the construction and analysis upon the construction of the research subject is key to ensure validity. Also here, transparency over the procedures and methods is crucial (Flick, 2007).

To assure reliability and validity as much as possible, this study payed a lot of attention to the setting of and the tone set in the interviews. The authors tried to create a comfortable and safe environment to have an open and honest conversation, thus minimising their influence on the answers. This was done by being transparent about the research aim and by mentioning the fact that there were no right or wrong answers to the questions, explaining that the research aspired to explore the interviewee's perception on the topic of interest. The interviews were conducted according to an interview guideline which stated the main questions that helped answering the research questions. This assured that all important topics were covered in the interviews and helped the interviewer feel confident and prepared. The interview technique used was however semi-structured, therefore the exact content of the conversation was unpredictable, which does not undermine the validity of this technique for the qualitative data collection. The interviewers tried to make a personal connection in the beginning of the interview to make both parties feel comfortable and increase the likelihood of deep, open, and honest answers to the questions. This was done by a short introduction of the authors and the interviewee. The research was not dealing with sensitive information, yet the authors always asked for the permission of the interviewees for recording the sessions. Furthermore, at the beginning of each interview, the participants got informed about their right of omitting questions they did not feel comfortable answering or stepping out of the interview if needed. The authors acknowledge that this could have led to modified answers or behaviour from the interviewee.

3.4. Limitations

Due to the COVID-19 pandemic and related restraints, the research was dealing with special circumstances that must be taken into consideration while reading the study. Most organisations are currently working in crisis mode and rather surviving than thriving. This made it hard to find respondents for the interviews. Time is generally precious, and even more so in this case, where organisations can not necessarily afford to spend their time on research matters. However, the study managed to gather a group of 10 respondents. This is considered a valid number and helps in creating reliable outcomes. Nevertheless, the authors must be careful with generalising the results. The

formulation of generalised statements is tricky with qualitative data in general because people's feelings, experiences and perceptions can be very different. Therefore, it cannot be said that the outcomes will be the same for everybody and the authors as well as the readers should be aware of that. Instead, the goal of the qualitative research is to provide a contextualised understanding of the participants' experiences and perspectives (Polit & Beck, 2010).

The fact that the interviews took place at different times and on different days might create a bias in the outcomes of the interviews but this was realistically seen unpreventable, since the authors were dependent on the input of the interviewees and were happy that they were willing to participate in the research, especially in this particular situation (ongoing COVID-19 pandemic). Therefore, the authors worked around the schedules of the interviewees. Preferably the interviews would have taken place in a physical face-to-face environment but due to the circumstances caused by the COVID-19 pandemic this was not possible, considering the health risks for both the interviewees, interviewers, and the rest of society. In an attempt to recreate a natural setting, the authors chose to work with Zoom, which offers an audio-visual experience. Even though the non-verbal communication in a Zoom conversation is limited, facial expressions and reactions of both interviewees and interviewers were visible, making it easier for both parties to interpret statements and questions, creating a fluent conversation. For most participants English was not a native language. However, this did not appear as an obstacle since the interviewees seemed comfortable with expressing themselves in English. Lastly, a potential bias could arise from the chosen research focus which aims at investigating the interviewed experts' perception and opinions on the topic. Both authors and readers should be aware that those who work with gamification as a tool possibly have a more optimistic view on the potential that is ascribed to gamified applications. However, the semi-structured interview aimed at also exposing the challenges of and for gamification and managed to obtain interesting insights into that matter.

4. Findings

This chapter presents an overview of the findings extracted from 10 interviews with experts in the field of gamification. The structure of this section follows the order of the research questions. The first section (4.1.) starts by outlining the interviewees' definition of gamification. Building up on this, the second section (4.2.) directly addresses the main research question by delineating both the opportunities and challenges of gamification for sustainability purposes. Section 4.3. and 4.4. present the interviewees' experience of organisational responses to gamification and their speculations about the future of gamification.

4.1. Defining Gamification

In the beginning of each interview, the gamification experts were asked to describe the concept of gamification in their own words. The findings related to the definition of the concept of gamification show that gamification is a versatile concept and can be understood in many different ways, which is mentioned by interviewee A as "it is not a universal concept". However, understanding the way the interviewees perceive gamification is fundamental for answering the research questions. Therefore, this section aims to display the common findings. Knowing that the research focuses on different roles within the field, it makes sense that different perspectives highlight different aspects of the concept. However, the aspects that define gamification mentioned by multiple interviewed experts are: introducing an element of fun (A, B, D, G, H)[1] and creating engagement and interest in

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[1] Citations and statements by the interviewees are indicated by the letters A-J, referring to the different interviewed experts (see Table 1)

a typically boring process (C, F, H, I) through implementing playful design and game elements (A, C, E, G, H). According to some, gamification gives players the opportunity to be part of a journey and explore (A, C) by overcoming obstacles and having freedom of choice (C, D, J). It is also referred to as a (unique) experience (D, F). The table below shows a selection of definitions which, taken together, cover all the aspects mentioned in the different interviews.

Table 2: Defining gamification	
Interviewee A	"sending them on a journey but also taking them out of the mindset of where they are right now. So, they forget where they were, and they come back to it with a different perspective"
Interviewee D	"what gamification allows us is a free choice" and "being part, influence and enjoy while being in it"
Interviewee E	"it is a process of introducing game elements to for example, education, job environments, cultural and social environments. To help and enforce these cultures"
Interviewee G	"set a winning condition, or any goal and you can reach that goal with playful thinking"
Interviewee H	"a design strategy which uses gamified elements to make a process, or whatever you want to do depending on the context you want to use gamification in, more efficient fun and engaging"

Several interviewed experts explicitly mentioned that gamification can be applied in many different contexts and situations (E, G, I, J) and is often referred to as a collaborative process, being part of and contributing to something bigger (A, B, F) or working towards a (common) goal (A, G). Interviewee B, C and E also stressed the power of gamification as a learning tool for generating new knowledge and/or skills in their definition.

Applied Game Design Elements

Game design elements are a crucial part of gamification to create a fun and engaging process (as explained in section 2.1.2.). This can however be done in many ways. Throughout the interviews, the interviewers asked for concrete game design elements and examples. The interviewees named many game design elements that are used for gamification tools that focus on sustainability issues.

Storytelling was mentioned by multiple interviewed experts as a means to create a journey and experience for the players (A, B, C, H). An explorative character with challenges, choosing options, and decision-making was mentioned as a method to create the feeling of autonomy and competence for the players (A, B, C, F, G, I). Furthermore, providing different perspectives and angles on a topic or issue was mentioned as desirable by many interviewees. This could be generated through the implementation of role-play, dialogues, exemplifying, and feedback and reflection tools (A, B, C, F,

I, J). A common goal or higher purpose, team tasks where the players must rely on each other, and dialogue tools can, according to multiple interviewees, give the gamified process a collaborative character (A, C, D, G, J). Finally, a competitive setting can be created through the implementation of external incentives such as a reward systems, points, badges, levels, and scoreboards or leaderboards (A, C, D, E, G).

Upon the topic of collaboration versus competition, interviewee G stated the following: "For sustainability, I think that maybe teamwork is a little bit better because sustainability is such a wholesome concept that you actually don't want to make it a competition. But I will say that competition is very strong". Interviewee A added to that, stating

> this is our aim: to make them care about sustainability. And you will not make them care about sustainability if you make them compete. You make them care about sustainability if you make them contribute; if you make them feel that they are a team

This opinion was shared and mentioned by various interviewed experts (A, C, D, F, G) who agreed that in the context of sustainability a collaborative setting was more favourable.

Questions, quizzes, puzzles, memory tasks, physical elements (e.g. pressing on things, moving around, using the body), visuals (e.g. videos, pictures, and fun facts), oral tasks (e.g. teaching or explaining others) and avatars (a graphical image or character that represents the player) are more specific components mentioned by the interviewees and used to reach the aforementioned design elements. For example, evoking a dialogue can be done through questions and oral tasks but also through implementing a physical element like a talking stick. Interviewee I explained that the designer needs to find out what it is that makes people talk in order to create dialogue, this can, for instance, be when a player is the only one who knows something or when somebody does not understand them. This should then become the core of the activity, for example through implementation of oral tasks such as teaching others.

Interviewee A and D used the word "nudging" several times during the interviews, referring to elements that make people do something or unconsciously influence their behaviour by implementing certain triggers. Interviewee D gave this example: "we try to put the information that has the highest impact first because people have a tendency to remember much more the first answer".

Lastly, interviewee F stressed the need for integrating surprising elements and suspense creating an ongoing "cliff-hanger" within the gamified process with the aim to keep players engaged. Likewise, interviewee A and D mentioned the element of surprise to be powerful and necessary. Interviewee A explained that when people are confronted with surprising facts that are new to them, they will talk and discuss about it even after the game-like experience. Interviewee D indicates that "you need to have something that sparks you, motivates you and surprises you".

The Need for Gamification for Sustainability

The need for sustainability in organisations and gamification as an answer to it was a theme that often re-emerged during the interviews without the interviewers asking for it.

The interviewees seemed to acknowledge the need for integrating sustainability in organisational practices and the complexity of sustainability making it challenging to do so. Interviewee D for example stated: "I do believe that sustainability is a trend that comes from the need in the market as we are moving to a younger generation that pressures the market. And there is not much time." and interviewee F mentioned: "[sustainability] is so insanely complex and you sometimes feel so lost.".

Interviewees A, B, C, D, F and G all mentioned the importance of involving all levels, each department, and every employee in the process of moving towards sustainability. According to them, there has to be a clear shared vision and shared values throughout organisations. This is also described as the organisational culture and even referred to as the most important aspect of an organisation by interviewee D. They[2] believe the values to be the foundation of an organisation and shared values within the organisation as conditional in the process of organisational change for sustainability. They also mentioned that top levels of organisations often struggle with communicating their visions, purposes, values, and strategies to the rest of the organisation, stating:

> the problem with the corporates is the cascading of the strategy, the purpose and their values. When it comes to that, employees usually don't want to take it from the CEO that tells you, you need to do this and that. (D)

Interviewee J, however, mentioned that "people and organisations are more things than just one", meaning that people can have more interests and differing values. In this case, the interviewee differentiates between shared, auxiliary, and competing values, stating that

> it might not be the best idea to very clearly state the particular interest, because you will then also find the differences and enlarge them [the competing values]. So, what I think is best, is to work with a common purpose. Which is not the same as values, because it's outside of you and you look at something that you can create together and then you have more shared interest and it will also be possible for you to be yourself and contribute in a manner that might not be what the others do.

Hence, interviewee J believes that it is more beneficiary to create a common purpose within an organisation rather than focusing on creating shared values because it can be advantageous to have differing interests and values resulting in different skillsets, as long as there is a shared interest that drives the people. This might however also be a difference in language used by the different interviewed experts since they come from different disciplinary backgrounds. The authors believe that interviewee D for example referred to the same idea using differing terms as "values" and "purpose".

Gamification is described as a way to address the organisations' sustainability challenge and culture change needed by different interviewed experts and believed to be fitting the needs of the new generation, which is characterised as smarter, faster, and with a different focus by interviewee D.

4.2.   The Potential of Gamification for Sustainability

This section looks at the potential of gamification in addressing sustainability matters in an organisational context. Coming from the interviewed experts' perspective it was important for the authors to take a critical look at the concept of gamification and explore both opportunities and challenges to paint a realistic picture. The findings displayed below help answering sub-question 2 and 3.

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[2] This thesis uses the gender-neutral singular pronouns they, them, their to refer to the interviewed experts

4.2.1. Opportunities

Fun and Engagement

The interviewed experts agreed that gamification has the power to turn a work-related task into a fun and engaging process. This can be done by adding elements of fun through game design elements and not only involve but also make employees contribute to this process. By creating an interactive process, the aim is to distract employees from the original (boring) work task and immerse them in a journey that leads to a positive and joyful experience. The table below shows a selection of citations which, taken together, cover what was mentioned in the different interviews.

Table 3: Employee engagement	
Interviewee A	"So, I think gamification is raising the level of engagement. People find another reason to participate in something. When something is fun, people are like 'yeah actually this is cool'. And you don't feel like 'ugh, I'm stuck with this, I have to go to this learning'"
Interviewee D	"gamification leads to experience; experience leads to a lot of much more genuine learning lessons"
Interviewee F	"something that engages people, so they lose themselves for a while, lose their barriers"
Interviewee G	"Basically, it makes regular stuff way more fun, and more; like you get more satisfaction of completing some tasks" and "makes things a happier thing to do. Just because it's such a powerful tool, gamification"

Simplifying Complex Matters

Several interviewed experts (A, B, C, F, H) describe gamification as a tool to simplify a complex matter or issue such as sustainability. For instance, by guiding the employee through a process step by step, offering small amounts of information at a time in a fun and interactive way. This makes it easier for the employee to comprehend the complex matter and keeps the employee motivated to understand it, rather than overwhelming them with a huge amount of dense information at once. Interviewee B described this as: "Gamification just kind of breaks it [sustainability] into smaller parts and makes it more understandable for people" and interviewee A explained: "Make it [sustainability] into something that people can get a grasp of, and not necessarily understand but have them understand how to look into it and how they can extract the relevant information and work with it". This highlights that people do not have to fully understand the complex matter immediately but at least should get familiar with it and know what and where to look into it. Interviewee G described this as: "the people are motivated to find out more that they will go seek information or do some action steps on their own …. So, you inspire them to do more, to be curious".

Generating Understanding, Knowledge, and Skills

The element of simplifying connects to the opportunity gamification offers to learn about new things and make employees understand certain topics or complex matters. The interviewed experts referred

to gamification as a powerful tool to generate knowledge and develop new skills in an organisation. For sustainability for example, gamification can be used to introduce employees to the SDG's and global sustainability challenges, and make them understand it in order for them to start working with it and commit to the sustainability strategy of the organisation. Furthermore, multiple interviewees mentioned the possibility to create a safe environment for employees to explore, experiment and learn by trial and error (A, D, F, I, J). The idea behind this is that if something goes wrong in the gamified experience it has no big consequences in real life but still shows the players that the actions taken did not lead to the desired outcome. In ideal cases, the learning from this experience can be transferred to real life situations. Interviewee I for example stated: "So let them make that [mistake] in games and let them talk about it in the game". Whereas interviewee J described it as: "You can use game worlds, built around action-reaction and rules, to create sandboxes and speed up time".

Offering Different Perspectives

According to the interviewees, gamification can also be used to provide employees with different perspectives and show them different angles and points of view on a complex matter, like sustainability. By implementing game design elements, like role-play, dialogue tools or visuals, players can be presented with a different perspective than their own. This does not only help them understand issues in a different way but possibly creates empathy for external factors, according to some interviewed experts. Interviewee A explained this as the following:

> connecting to the level of empathy. … I know what I know and you give me something and I will assimilate just what feels right for me; what resonates with me. But if I talk with different people and understand what they know and what they care about, then my horizon and my perspective will increase. And maybe I don't agree: you think sustainability is about the planet, I think it is about society. But we both care about animals, so we have a common point and we will be more open to listen to each other, and we will see where we're coming from. And that is what collaborative learning is. It uses the power of examples, the power or peer learning, and that's what we are creating.

Interviewee D suggests that letting the players explore different scenarios and points of view might influence their decision-making process even after the gamified experience, stating "when they will be faced with a decision out there, hopefully they will process differently, and possibly make a different decision than before".

According to some interviewees, letting employees explore and discover how they relate to sustainability on a personal and professional level and showing them their responsibility in and personal benefit from the matter might help them value it and act upon it, since they can connect to the bigger picture and can contribute to it. Interviewees A and C also mentioned that exploring the personal values and relatedness of employees towards sustainability offers opportunities for the organisation to collect data and understand their employees better.

Employee Empowerment

Multiple interviewed experts (A, B, C, D, E, J) stated that a gamified process offers an opportunity to empower employees and bottom-up approaches within organisations. According to them, gamification tools have the power to give the employees a voice and let them be heard by the management levels. It was suggested that game design elements have the power to erase barriers between levels and create transparency. However, this requires trust on all levels, according to the interviewees.

Behaviour Change

When it comes to the possibility of changing behaviour through gamification, the opinions of the interviewees were divided. All interviewed experts believe that gamification has the power to create a change in behaviour, the question, however, is if this only occurs on a short-term basis or if the behaviour change can also show long-lasting effects. Interviewee F states that creating long-term behaviour change is a very complicated process and that the new behaviour should be pinned to an already existing habit and repeated for a long period of time in order for it to be internalised. A gamified process does not automatically entail that mechanism but does offer the possibility to create the intention of a new behaviour and pin it on a new behaviour outside of the game. Interviewee F described this as:

> we're trying to teach people to be better leaders or to be more open employees or to have cultural changes. I think it's a good conversation starter, but behaviour change doesn't happen with a game. And I think that's the flaw of games that people think "Okay, now we play the game now we can all go out and do it". That's not how behaviour is changed. Behaviour is changed by changing behaviour every day, basically. So, you have to change little things every day.

Interviewee G, on the other hand, stated that "gamification is all about changing behaviour and making people aware of things" and proposed that it is possible to create a long-term behaviour change if the gamification tool is designed very well. Regarding behaviour change, interviewee J suggested that a gamification tool has the most control over the desired behavioural outcome when it does not let the system respond to the autonomy of the player but controls the actions and the consequences. On the other hand, they stated that the engagement of a player is highest when they have the most autonomy and the system reacts to the actions of the player. However, the learned behaviour in that case is hard to control. In other words, it is possible to change behaviour through gamification in a less engaging and thus less effective way by controlling the process or in a more engaging and effective way but without control over the behavioural outcomes.

In sum, all interviewed experts seemed to agree that connecting to intrinsic motivation of the employee or creating intrinsic motivation for a topic is more likely to have a long-lasting influence on the behaviour of the players. Extrinsic motivators such as rewards systems and points were viewed as less desirable when it comes to addressing the topic of sustainability, or at least need to be implemented carefully.

Versatility and Customisation

Lastly, gamification is described as a versatile concept with endless possibilities by many of the interviewees. It comes in different shapes and sizes and therefore offers loads of possibilities. It was mentioned that, for the gamified process to have a valuable impact, it should fit the needs of the user and the issue that it is addressing. Interviewee D, for instance, believes that

> you need to understand that the biggest and the most difficult to tackle is the human capital. It is so difficult why? we are well informed; we are well educated, and we are all different. Although we look the same you know, like same nationalities but we are so different because where does the brain build on and what our personality and characteristics are makes it very difficult out there for companies to understand.

Interviewee I also described the importance of understanding the user in order to create a tool that will relate to them, stating:

You have to understand people a lot before you use gamification. If you don't understand people, you don't know how to change their behaviour, you don't know what is the inside or why they don't change and you attack in the wrong position.

4.2.2. Challenges

Understanding the User

The versatile character of gamification tools is like a double-edged sword, offering many opportunities but also leading to a lot of challenges. Some of the interviewees pointed out, that in order to design an effective gamification tool, it is crucial to understand the needs and interests of the user first. As interviewee I indicated: "For me, if you don't understand the user, you cannot make the gamification correctly". This, however, is extremely complex since gamification can be used in many different contexts and situations. All decisions made in the design of the gamification tool have an influence on the outcome of the process, hence, some interviewed experts believe that finding the right balance is key. The interviewees mentioned for example the balance between theory and practice, serious and fun, intrinsic and extrinsic rewards, collaboration and competition, and digital and physical elements within the gamified process. Many interviewed experts talked about designing the gamification tool in the 'right' way, yet most of them agreed that there was no one solution to do so. Table 4 sums up the interviewees' opinions on this topic.

Table 4: Balance of game design elements	
Interviewee C	"So, there is always this balance that you need to find. Because if it is a very simple game, then you lose the value; but if it is very professional and very scientific, at the end you lose the interest"
Interviewee G	"challenge; is that gamification is mostly based on intrinsic motivation. So, lots of systems use extrinsic motivation, which is like they put money in your face or badges or like, little gifts or like rewards that actually are very materialistic. While, like with sustainability, it's such a big issue and such a challenge to actually change things in your life, that it must come from inside"
Interviewee I	"it's like the art of balancing. And the communication is the art as well; how to give people the right information and it's like the popper bite, I call it, like if you give people a cracker, if it is too big, people cannot eat it, but if it is too small, it's not good for them. So yeah, and you also want to make it look pretty. So, if you put gamification and really focus on the fun aspect and forget about the content, it's not going to work"

Trial and Error

According to the interviewees, the process of designing a game is complicated and time-consuming, requires in-depth research and often implicates various phases of trial and error as well as experimentation. There is not one right way to design a gamified process since every tool has a different focus and target group. Copying and using second-hand gamification, referring to the use of existing tools that were designed for a different context, were suggested to be ineffective.

Interviewee I stated the following regarding this topic: "if you try to use the second-hand gamification from other people, that cannot work for your context" and interviewee E indicated: "it can be an obstacle if you have to invest time and effort to do it right. But then once you figured it out and are trained to implement it in the best way it's worth it!".

Changing Ways of Working and Thinking

Another challenge of gamification, according to some of the interviewed experts (A, B, E, I), results from the way gamification is perceived by organisations and powerful actors within them. Some interviewees experienced that gamification is not always taken seriously because it is "only" a game. Interviewee A declared: "Some people don't like gamification because everything needs to be serious, especially when you're talking to businesses" and interviewee D described that some actors within organisations respond to gamification with: "'We are a serious business! I don't want anything like that'" and elaborated on it, stating that "they don't understand this can help them to play a second and make the brains of the employees work in a different way to come up with different solutions and work as normally, with the potential to innovate". Interviewee E, on the other hand, mentioned that "some managers of different departments want to make a change and implement new ways like gamification or other processes", however

> they bring their ideas to directors or C level people and then they say "oh no no, we first have to invest in that and blabla". And there is also the obstacle of how companies work. It is super difficult in huge companies to break this process of working.

On top of that, they stated that a lot of organisations see gamification as a tool that is nice to have but it has no priority for them, even though gamification could be the answer to their problems. From an economical perspective these organisations do not seem to see the sense in spending their finances on gamification, viewing it more as a luxury good rather than a necessity. In interviewee E's opinion, these organisations need to start understanding the power and possibilities of gamification.

Oversimplifying Complex Matters

Interviewee F and H mentioned the challenge of oversimplifying a complex matter through gamification. While simplifying a complex matter was mentioned earlier as an opportunity, some interviewed experts also pointed out the downside of it. Interviewee F suggested that oversimplifying complex issues will "make complex problems seem less complex than they really are". Similarly, interviewee H pointed out that the danger of oversimplifying sustainability issues lies in

> making something serious, you know sustainability and something very challenging, too much easy, and especially when it comes to the businesses and you are sending a message that they can just play with sustainability instead of making a real impact or the real change. How much gamification can we use and still show that we are not just messing around with this topic because it is very serious.

Limits

Interviewees B and J explained that gamification is not an omnipotent tool and therefore cannot be used to solve all sustainability problems in the world. Interviewee J gave the following example:

> So, we had a tool, where we, I don't know, it was for all (…) workers of a dairy production organisation. And it was focused on micro-innovation and micro-sustainability; "how can we better not use so much fuel when we drive, how can we recycle stuff". And it was a very nice

gamified process … and they went "oh, dairy is actually killing the world, just because of all of the cows". So, the real issue is that it's an unsustainable business.

According to this interviewee, the core operations of such businesses are highly unsustainable and cannot be changed by applying gamification but require a change in regulations and policies. Interviewee H also referred to this challenge, explaining that gamification cannot do what the law can do, meaning that there are some sustainability problems that cannot be solved with gamification but must be addressed by law and policy makers. This interviewee also stated: "I think it is a bit idealistic to think that companies will change everything with gamification but, at least it is a start".

Transfer to Reality

The strength and distinct character of gamification is the element of game which in return comes with its own challenges. When asked about the challenges for gamification, interviewee F simply answered: "That it's a game". Expanding on this, the interviewee added that "what happens within the game is a magic circle, anything can happen. You can also throw magic into the game. And you can deal with things in ways that you can't in reality". They then explained that a well-designed game was able to cross this threshold between the game and reality, so that players can take something with them into the real world. The challenge is to translate and transfer what was learned in the game and take it into reality and apply it. However, in the end it will be up to the people themselves to do that since "you can't force people to change and maybe they hate everything that has to do with sustainability but have to take the training and they don't want to get anything out of it" (B).

4.3. Organisation's Response to Gamification

The authors also explored the interviewees' impressions of organisations' and society's response to gamification tools. The following section reflects on sub-question 4, describing how people usually react to the introduction of a gamification tools, as experienced by the interviewed experts.

Several interviewed experts mentioned people's lack of understanding of the gamification topic with some cases where people "never heard of the word gamification" (E). It was also mentioned that people who do not see the value of gamification for their business respond to the concept with hesitation or distrust. Interviewee G indicated that they feel like there is still a lot of prejudice towards games and gaming even though the use of games is widespread. Likewise, interviewee D stated that organisations "see [gamification] as something superficial or something that is not serious, it is very much associated with that." Adding to that, interviewee C suggested that some companies do not recognise the value that comes from making their employees happy.

On the other hand, interviewed experts A, F, G and J described that organisations seem to become increasingly more open to gamification, that people react positively to it, and that they see it as an effective tool even if they do not fully understand it. As interviewee D declared: "Companies do not understand gamification, but they know that their employees are reacting to it". Other interviewees pointed out, that "the world is catching up" (J), and that especially the younger generation seems more ready to embrace the new concept, as mentioned by interviewee G: "they are more ready for these kind of innovative things because they see that the old way isn't always the best way". Interviewee F described it as: "Gamification was something we had to sell to people. … Now people call us all the time, we have a really good reputation. And they want to work with us and they know that the tools work" and "it has definitely become more mainstream, and like the big organisations know that it's better than talking to people via PowerPoint".

According to interviewees C and D, whether an organisation reacts positively to gamification depends on their cultural context and the industry they are in. Interviewee C, for example, stated that

gamification is very popular in Scandinavia and less common in the U.S. and that this could be based upon cultural and organisational differences. Likewise, interviewee D mentioned that China and Japan have a big gamification culture, and that in these contexts it already seems to be the norm to use the concept for business practices.

Lastly, interviewee G explained that gamified elements can be found everywhere (e.g. in the supermarket), and that people are usually not aware that they are exposed to it.

4.4. Future Perspective of Gamification (for Sustainability)

This last section of the findings displays the experts' view on the future perspective of gamification and their thoughts on what the concept would need to reach its full potential, thus outlining the discussion around sub-question 5.

Overall, the interviewed experts seemed to have a positive expectation towards the future, mentioning that gamification will keep on growing, gain popularity, and will be used more in business contexts now that people start to understand and value it. Some interviewed experts even claimed that everything is going to be gamified (G, I) and that there are no limits to the concept - "if you can imagine it, it can happen" (G).

Interviewees A and D, however, believe gamification will first be exploited, overused, then redefined, and eventually have great impact in the future. Interviewee A described this as the following:

> People are going to start to use it more and more, it will get overused and then it will be defined to "this is where we need it and this is where we don't need it". But I think it will change learning into a concept where you will be competing with yourself and not with others - in the classroom, and also as an employee. You are competing for the company's results and not competing against your colleagues. I think it will take different perspectives, but we will see.

Interviewee J also believes that gamification will be redefined and that the future trend will focus on smaller and more flexible gamified tools that fit into daily work processes, stating: "I believe the trend, and going forward, will be: smaller and better".

According to the interviewees, our time of digitalisation, currently enhanced by the situation of the COVID-19 pandemic where employees work online from home and many organisations need to consider new digital solutions, offers big opportunities for gamification. Experts B, E, G, and H believe that this will be a strong driver for the growth of the concept. Not only digitalisation but also sustainability is gaining more and more interest in society and is starting to find its way into the business world. Consequently, gamification for sustainability was deemed to evolve in the coming years (D, E, F).

Lastly, interviewee G believes that gamification needs several good and ethical examples for it to reach its full potential and for the world to embrace it. Correspondingly, interviewee E explained that for people to understand and get familiar with the concept, more substantial content on gamification will be required.

5. Analysis

This chapter makes a connection between the findings of section 4. and the literature outlined in section 2. and presents a discussion between the two. Due to a lack of research on gamification for sustainability and little research on gamification in general, it was challenging to create the connection between the literature and the findings in some of the sections. The structure of this chapter follows the order of the sub-questions and ends with a paragraph connecting gamification to the value alignment approach (introduced in section 2.2.1.).

Definition and Game Design Elements of Gamification for Sustainability

This researched explored the topic of gamification by interviewing experts from different companies, backgrounds, and functions in the field of gamification. It is therefore not surprising, that the interviewees defined gamification in different ways. This is also in coherence with the literature stating that no consensus on the definition of gamification has been reached yet (Alsawaier, 2017). There were, however, many similarities reoccurring in the interviews, as presented in the findings. In defining gamification, the aspects of fun and engagement got the most attention from the interviewees and many talked about creating a journey and an experience. Both the experts participating in this research and the literature on gamification indicate that gamification has the power to add an element of fun to a work-related task and engage employees. This could potentially be used to motivate the employees to commit to the organisation's sustainability efforts. Fun is, however, a hard to define concept (as described in section 2.1.3.). The interviewed experts stated that it is crucial to know the users, their needs, and motivations, in order to know what game design elements to integrate in the gamified tool in order to trigger the desired emotions and outcomes. Therefore, the interviewees stressed the importance of customisation to build a tool that fits to the user's player type, context and the issue addressed. Overall, the interviewees' definition of gamification was in line with the definition used in this research which describes gamification as the application of game design elements in non-game contexts to engage people and motivate action or learning.

Looking at the game design elements, there were some interesting findings. Striking was the fact, that many of the interviewed experts advocated for collaboration over competition. Even though competition is seen as a powerful aspect of gamification, the interviewees generally agreed, that gamification tools which aim to foster sustainable behaviour should focus on intrinsic rather than extrinsic motivators and use game design elements that go beyond the PBL (Points, Badges, Leaderboards) to do so. This connects to the notion put forward by Perryer et al., (2016) stating that these elements (PBL) typically create competition and undermine the collaboration needed to solve complex business problems. In sum, the interviewed experts preferred to put the focus on creating a unique collaborative experience rather than building up a competition between the employees over a topic as complex as sustainability.

Tapping into the player's intrinsic motivation is believed to be possible by creating a progressive journey with a compelling storyline, thus sharing a vision that the player can connect to. Game design elements like role-play or dialogue tools that offer different perspectives and angles on a topic are considered to have the power to create an 'aha' moment for the player, which can help to get a deeper understanding of a topic, such as sustainability, and create empathy for external factors or stakeholders. Freedom of choice was mentioned as an important element in this process, creating a safe environment for critical decision-making which ideally influences the player's decision making process even after the gamified activity, for example by choosing more sustainable options after having reflected on the different options within the gamified experience. In the literature, immediate

feedback is believed to facilitate behaviour change by either reinforcing appropriate behaviour or offer the opportunity for learning and adjustment of negative behaviour (Perryer et al., 2016). Furthermore, the celebration of small successes and the receiving of positive feedback is considered to evoke a feeling of fulfilment and contribution to something bigger than oneself.

Gamification's Opportunities and Challenges

One of the most prominent potentials attributed to gamification is the generation of knowledge and understanding, as well as the development of (new) skills within an organisation. By creating a captivating and enjoyable activity, gamification can motivate the employees to engage with a complex topic. This relates to the experience of flow (studied by Csikszentmihalyi, 1988) which was observed to have the power to expand a person's interests in a new topic and improve skills and understanding of already existing interests (Nakamura and Csikszentmihalyi, 2005). When connected to sustainability challenges, this potential offers great opportunities for gamification tools to render the complex sustainability issue into a more graspable concept that employees are interested in and want to learn more about. Understanding sustainability is foundational for putting it into practice, therefore it is important to educate the employees on this topic before expecting them to act upon the organisational sustainability strategy. The interviewed gamification experts explained how the tool can be used to break a complex issue into smaller and better manageable pieces of information which can be presented to the employees in a captivating way by making use of different game design elements. Oversimplifying a complex matter bears, however, also a danger. Some interviewees pointed out that it is not desirable to make a complex issue look too easy or treat it as something that is not serious.

Another opportunity of gamification, mentioned by the interviewed experts, is one of employee empowerment. According to them, gamification helps to involve and engage employees on all levels, giving them a voice and supporting bottom-up approaches which makes the employees feel heard by the management level. The literature stresses the importance of employee involvement when moving towards corporate sustainability (Baumgartner, 2009; Lozano, 2013). A gamified tool can stimulate the interaction between employees from different levels and departments, possibly leading to a better understanding of each other's values and visions. This in turn will strengthen the connection between employees and the organisation, resulting in combined and therefore more impactful sustainability efforts (as described by Gautam et al., 2004; Van Knippenberg & Sleebos, 2006).

As previously mentioned, gamification is believed to have the potential of creating empathy for and a more profound understanding of external factors and complex issues. By informing the employees in an engaging way, offering them different perspectives, showing them how they relate to the topic of sustainability and how to take action, gamification can give the employees a sense of responsibility and contribution. This connects back to the self-determination theory (Deci & Ryan, 1985; 2000) that identifies the feeling of relatedness as one of the main aspects for intrinsic motivation which in turn can lead to a commitment for the task at hand and a feeling of pride and skill by achieving the goals (see also section 2.1.3.).

When it comes to the topic of motivation and behaviour change, the interviewed experts recognised that gamification will not be able to transform an employee's behaviour overnight. Corporate sustainability requires a change in mindset and values of employees leading to more sustainable behaviour according to the literature (e.g. Greene et al., 2014) and the interviewees. However, a lack of understanding the specifics of such a behaviour change process in a gamification context is reflected in the mixed opinions expressed by the interviewees. It is suggested that gamification has the potential to change behaviour but how exactly this process works and if gamification has the

potential to tap into and alter the employee's values remains unclear. The interviewed experts however seemed to agree with the research and mentioned that a focus on intrinsic rather than extrinsic motivators is more likely to have a long-lasting impact on behaviour change (as described in section 2.2.2.).

Despite advocating for gamification as a powerful tool to foster sustainability practices in organisations, the interviewees also expressed critical considerations and pointed out the limits of the concept. For instance, it was mentioned that gamification cannot radically transform a business with unsustainable core operations and that it also does not have the same (tangible) impact as a change in policies or the law. Additionally, and in order to be more than just a game, a transfer from the gamified experience to reality must be made. This transfer helps the players apply the new knowledge and perspectives in real life and is a very important part of gamification for sustainability. However, this is tricky to implement and gets often forgotten or underestimated according to the interviewed experts. In the academic literature this issue is hardly ever (if ever) addressed.

Another challenge for designing a meaningful gamification tool, as pointed out by the interviewed experts, lies in finding the right balance - between theory and practice, competition and collaboration, serious and fun, and digital and physical elements. How these elements should be balanced out is dependent on the specific context and situation. Therefore, copying a gamified tool that was designed for a different situation is likely to render it ineffective. Instead, the process of designing a gamification tool asks for creativity and originality. Deterding et. al., (2015) seem to agree with this, outlining aspects that need to be considered in the design process of a gamified tool, such as the motivational and enjoyable qualities of gameplay, and highlighting that this needs to constitute an iterative process. In this regard, the findings from the interviews are also in line with the literature on gamification which stresses the importance of the alignment between the gamification tool and the addressed issue as well as player type (Perryer et al., 2016; Robson et al., 2016).

Organisational Response to Gamification (for Sustainability)

Organisation's response to gamification (for sustainability) has been proven to be divided. On one hand, experiences from some of the interviewed experts showed a lack of understanding towards the concept from the side of businesses. Arising from this lack of understanding, the interviewees indicated that gamification is sometimes met with prejudice and not taken seriously or even represents an entirely unknown concept to some companies. In these cases, it was mentioned that organisations do not see the added value and power of gamification. It was pointed out, that both gamification and sustainability are not always an organisation's priority but are rather viewed as a luxury add-on that businesses not necessarily want to invest in. On the other hand, organisations' demand for gamification was described as increasing by some of the interviewed experts. Many organisations seem to recognise the effectiveness of the tool without fully understanding the concept and its potential. The two views on the perception of gamification - the lack of understanding on one side and the increasing interest in it on the other - are also represented in the academic literature on gamification. Robson et al., (2015), for instance, describes the "lack of understanding of what gamification is, how gamification works, and, more specifically, how to design gamification experiences that inspire player … behavior changes and result in desirable outcomes" (p. 412). Despite the increase in the adoption of gamified application in the corporate sector, the literature and empirical data indicates that gamification might not yet be used in the "best/most effective" way. Instead, its application remains limited to the incorporation of the PBL triad, leading to extrinsically motivated behaviour change and not to a change in the employees' values and intrinsic motivation for sustainability behaviour.

Imagining the Future of Gamification

In the last decade, the concept of gamification has gained increased interest, not only from the corporate world, but also from the academic society. There appears to be a connection between corporate's perception of the concept and advancements in the field of gamification literature. The growing interest of the corporate community pushes the academic literature to search for a deeper understanding of the concept, its potential and effects, thus leading to more research in the field. Some of the interviewed gamification experts predict that the application of gamification in a business context will reach a level of over exploitation. However, the interviewees remain optimistic, suggesting that the concept will be redefined, eventually leading to a more conscious and effective way of using gamification. In the eyes of some interviewees, this will potentially lead to a revolution in the conceptualisation of work structures or education (also predicted by some scholars, e.g. Burke & Hiltbrand, 2011). For this to happen, the interviewed experts put forward the need of several outstanding and ethical examples as well as more substantial content on the concept of gamification, suggesting that the concept will need more academic literature to improve its legitimacy. By interviewed experts and previous literature alike, digitalisation is thought to keep on constituting a driving force for gamification, whereas the COVID-19 pandemic situation is viewed as an exemplary situation of increased usage of digital tools. In this regard, gamification is believed to offer an opportunity to engage employees working remotely or online. Nevertheless, some interviewees highlighted the importance of physical tools and stated that even in a digitalised future the power of tangible elements should not be underestimated. In total, the interviewed experts looked at the future perspective of gamification with an optimistic view, accrediting the concept with still undiscovered potential. In their opinions, the gamification of the future will be "smaller and better" (J) as well as directed to more specific tasks and implementable in the daily work routines of employees. Gamification for sustainability purposes was deemed by some as having "no limits" (G) and potentially being a strong driver for behaviour change for sustainability in the future.

Gamification as a Tool to Create Value Alignment for Sustainability

As put forward in the introduction, an increased amount of businesses is acknowledging the need for corporate sustainability. For companies to effectively incorporate sustainability, both the literature on organisational culture (see section 2.1.1. and 2.2.1.) as well as the interviewed gamification experts (see section 4.1.) stress the importance of involving all employees in the process of organisational culture change for sustainability. The value alignment approach (described in section 2.2.1.) proposes that for sustainability efforts to be effective, companies need to adopt a sustainability culture, where the employees' and the organisations' values for sustainability are aligned. As a first step in achieving this alignment between the values, organisations must clarify their sustainability values. In a second step, companies need to encourage their employees to proactively support the application of the set values in their everyday organisational behaviours (Branson, 2007). Furthermore, organisations that comprehend their employees' values can consider them in their sustainability strategy and thus strengthen the support for sustainable practices within the organisation (Bernal et al., 2018). The empirical data gathered in this research suggests, that gamification can be used as a tool to facilitate the value alignment process in two ways. First, the application of gamified tools allows organisations to gather data on their employees which can help them understand their employees' values and opinions on sustainability. Second, by creating fun activities and a unique experience, gamification has the potential to motivate employees to engage with the organisation's sustainability values. Furthermore, it can trigger re-engagement and motivate continuous behaviour change to keep up employees' sustainability efforts. Yet, to efficiently use gamification as a tool to achieve a values alignment and thus fostering sustainability practices, organisations need to get a better understanding of the concept and consider the opportunities and challenges that come with its implementation.

6. Discussion and Conclusion

This section answers the research questions formulated in the introduction, outlines the research's theoretical and practical implications, takes a critical look at the study by reflecting on its strengths and limitations, and gives recommendations for future research in the field of gamification for sustainability.

Key Findings

By exploring the interviewed experts' perspective on the topic of gamification and connecting it to theories in the field of gamification and organisational change, this thesis fulfilled the research aim by creating a multifaceted discourse around the question of the potential of gamification as a tool to foster sustainability practices within organisations. It can be concluded that the full potential of gamification for sustainability purposes has not yet been unlocked. Creating a deeper understanding of the company's sustainability values and directly relating them to the employees' personal values and decision-making process might be one of the main opportunities of gamification for sustainability. Additionally, presenting different perspectives and angles to a complex issue such as sustainability in an engaging way, helps employees understand the big picture and create empathy for external stakeholders. By integrating elements that connect to recognition and positive feedback, gamification can give employees a feeling of meaningfulness and fulfilment from their work. Furthermore, the opinions from the interviewed gamification experts, backed up by a part of the literature in the field, suggest that by tapping into a person's intrinsic motivation, gamification tools can have a big impact in changing the employee's behaviour and thus motivate sustainable practices. However, the concept of gamification also comes with a set of obstacles. One of the most prominent challenges put forth by the interviewees was centred around the need of building an understanding of the users in order to be able to design a gamified tool that fits to their needs and player type. Fully understanding the user and implementing the right game design elements in order to create an impactful experience for the player was identified as a challenging process. This is no surprise considering the complex psychological concepts involved, such as motivation and values. Thus, the arduous tasks for gamification tool designers consists in finding the right balance between fun and serious, collaboration and competition, digital and physical elements. Despite gamification's growing popularity within the business world, some organisations and managers are still hesitant towards the application of concept. More content and a number of good, ethical examples (designed with an understanding of the user, their needs and the issue addressed) are needed, in order to demonstrate the potential of gamification, promote a better understanding of the concept and potentially scale up the impact of the tool. However, the younger generations' interest for the concept already seems to be bigger, hence the expectation, based on literature and the empirical data presented in this research, is that gamification will grow over time and in parallel with new ways of working and thinking in organisations.

Theoretical and Practical Contribution

Building up on previous research in the field, this thesis shed new light on the topic of gamification by exploring it from the perspective of gamification experts (as opposed to the more commonly represented user perspective). By investigating the interviewees' definitions of the concept, this research enriched the terminology on gamification, thus contributing to a better understanding of the term. Furthermore, this paper connected the concept of gamification to the topic of sustainability, which has only been addressed by a small part of previous research in this field, thus contributing to more academic content on the "hot" topic of gamification. By connecting it to organisational theories and building upon previous research in the field of gamification, this paper backs up the concept, providing insights into its strong and weak points.

Employers who aim at effectively implementing gamification to foster more sustainability practices among their employees should carefully consider how they use gamification and what game design elements fit the needs. This study suggests that gamification can be a powerful tool to help

organisations spark a dialogue between employees from different levels and departments. This can be used to explore the employees' values and help create a shared understanding of the organisation's sustainability vision. Furthermore, by creating a captivating experience with new insights, meaningful choices, and positive feedback, the employees can be motivated to engage emotionally and intellectually and learn about the organisation's values, leading to a strengthened organisational sustainability culture. Gamification tools that connect to the player's intrinsic motivation are believed to prove more efficient in the long run and increase the likelihood of long-term change in behaviour. Practitioners should therefore strive to go beyond the simple implementation of points, badges and leaderboards (PBL) and focus on creating a meaningful experience for the player to immerse in. Moreover, the gamification tool should not only fit the user but also correspond to the sustainability strategy of the organisation and the goals arising from this strategy.

Strengths and Limitations of the Research

Gamification is still a young topic of interest in academic literature. This research contributes to this field by adopting the perspective of gamification experts. Since most publications focus on the user experience, the change in perspective offers new insights and adds to existing research in this field of research. Furthermore, the study chose to include experts from different organisations and different roles within the field of gamification, offering a variety of perspectives on the topic of interest and increasing the validity of the findings. Looking at gamification from the viewpoint of people who advocate for the implementation of gamification tools, however, also held a challenge for the authors when aiming to present a critical view on the concept and addressing its challenges. Since gamification is such a young and topical concept there is still a lot of ambiguity concerning the topic. For instance, there is yet no clear consensus on its definition and the terminology within the field. Additionally, the line between games and gamification often becomes blurred which can lead to confusion for the reader. Nonetheless, this research managed to work its way through the obscurity and aimed to uphold a consistency in the language used. To fully understand gamification for sustainability an in-depth understanding of very complex matters such as motivation and behaviour change is required. This, however, went beyond the scope of this research and the expertise of the authors. Nevertheless, the study managed to explore the potential of gamification as a tool to foster sustainability practices within organisations from the view of gamification experts.

Recommendations for Further Research

Despite the increased interest in gamification and rising numbers of academic publications in this field, the dearth of research on the topic of gamification for sustainability is noteworthy. To better understand the full potential of gamification for sustainable purposes and its impact on the users, further research is needed. With its exploration of the potential of gamification for sustainability, this thesis has revealed several research gaps that represent interesting areas for future research.

This study is one among only few publications that connect the topic of gamification to the field of sustainability. While this research focused on the experts' point of view, further research should be conducted looking at the phenomenon from different perspectives (e.g. user experience) to create a holistic understanding of gamification for sustainability.

In this research, value alignment was identified as a strong driver for creating a sustainability culture in companies and gamification was considered a potential tool to facilitate value alignment or at least create a shared understanding of sustainability within a company. However, the theoretical framework described in section 2.2.2. has shown that gamified applications rarely address the topic of values and instead often stay at a level of *extrinsic* motivation as a means to elicit behaviour change. The results of this research suggest that to have a long-term effect, gamification needs to focus on creating an *intrinsic* motivation that relates to the player's values. Yet, there is more research needed to clarify how exactly gamification relates to values and find out if gamification has the potential to change a player's values.

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Appendix

Interview guideline

Welcome and thank you for your participation in our research. We want to mention that the data will be processed anonymous. The interview will be recorded but only to transcribe and extract the important data afterwards. There are no right, or wrong answers and we are seeking for your perception, experiences, and opinion, so please answer the questions truthfully. If you can't or don't want to answer a question, please let us know and you are of course able to step out of the interview anytime. If you agree with these terms we will proceed and move on to the questions.

Introduction
Can you tell us a little bit about yourself? What is your background knowledge/story, where lie your interests and expertise and how did you end up in this organisation?
What is your role within the organisation?
How would you define 'gamification'?
What motivated you to work with gamification?

Gamification / Opportunities and Obstacles
How would describe the value alignment tool? - How does it work? - What are the objectives? - What makes it a gamification tool? - Which game design elements are used?
What is your role and what are your responsibilities in the process of creating the value alignment tool?
How does the values alignment tool tackle the issue of differing value and work towards aligning them?
In general, what is the potential of gamification for sustainability? - What are the possibilities? (what are the strengths of the concept, why does it work) - What are the barriers/challenges? (where does the concept lack, weaknesses)

(From an organisational and gamification perspective)
- Why should organisations use gamification tools or why not?
- What can gamification be used for and what not?

Gamification is believed to have the potential to induce behaviour change.
- Do you agree with this statement? Yes or no and why?
- Which elements of your gamification tool tackle behaviour change? And how?

People's perception of gamification

How do you think gamification tools are perceived by organisations?

How do you think gamification tools are perceived by the outside world?

What does the field of gamification need to reach its full potential?

How do you predict/imagine the future of gamification in a business context?

Where do you see the limits of gamification for social/sustainable purpose?

Do you think that approaches like gamification will become the norm to motivate behaviour change? Why (not)?