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RECONCEPTUALISING GAMIFICATION: PLAY AND PEDAGOGY

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Abstract: *Gamification is a complex and controversial concept. It has been both embraced as a marketing and education revolution, and dismissed as practice of exploitation. Contested within the debate around gamification has been the very concept of what a game is, what the core mechanics of games are, and whether gamification truly mobilises these core mechanics. This paper will challenge the foundation of this debate through reconceptualising gamification not as a simple set of techniques and mechanics, but as a pedagogic heritage, an alternative framework for training and shaping participant behaviour that has at its core the concepts of entertainment and engagement. In doing so it will recontextualise current practices of gamification into a longer and deeper history, and suggest potential pathways for more sophisticated gamification in the future.*

Keywords: Gamification; exploitationware; play; pedagogy; game mechanics; engagement

Introduction

There is understandable unease amongst many games studies academics and game designers about the concept of gamification. This awkward neologism used to describe any range of processes whereby game mechanics are integrated into traditionally non-game tasks, has become a favoured buzzword of marketers, online strategists, start-up gurus, venture capitalists and digital consultants. Many within gaming circles have become rightly sceptical of the hype surrounding gamification. The frequent predictions of gamification's 'power to change the world' have led many to outright dismiss this emerging practice, and others to be highly critical of underlying ethicality and effectiveness. For many game designers and game studies academics it seems that gamification is a temporary distraction, a passing fad, that adds little to the discussion of 'proper' gaming. Indeed for some gamification is a perversion and misunderstanding of the core principles of game design. In this paper I will suggest that whilst a healthy scepticism is necessary to balance the techno-evangelist fervour of many gamification advocates, a rigid rejection of all facets of gamification is reductionist and indeed reveals some highly problematic assumptions underpinning contemporary models of gaming. I challenge the reading of gamification as a misapplication of game design practices and demonstrate that many of the current critiques of gamification operate on a false binary between core game play mechanics and inessential feedback. I will show this division to be, not only flawed, but ultimately counterproductive not just for gamification but for game studies and game design more broadly.

   In this paper I will offer a conceptualisation of gamification, not as set of techniques or technologies, but as an academic discipline and theoretical heritage. I will argue that gamification is not simply a recent marketing trend but rather a product of an overlooked history of pedagogic refinement, a history of training that is effective, but largely ignored: the process of games teaching players how to play. In particular gamification can be seen as an extension of the mechanisms and principles through which video games teach complex tasks that players are not innately familiar with; tasks

players need to learn. By looking at the way in which games train players into certain practices of play this paper will attempt to resituate all gaming as a pedagogically constructed act and create a new discourse for understanding gamification. I will argue that video games are sophisticated pedagogic systems that train players into performing difficult tasks through innovative and highly developed means, and they do all this whilst maintaining player interest and engagement. Likewise gamification is always about pedagogy, whether it is designed to train profitable consumers, obedient and efficient workers, healthy citizen, or knowledgeable students, its goal is to produce and shape subjects and subjectivities. As such gamification should be understood, not as a radical new commercial or educational application of game design principles, but rather as continuation of a long ludic pedagogic heritage. Understanding gamification this way not only helps us recognize the real relationship between the current practices of gamification and more traditional forms of play, but it also suggests new and more sophisticated ways gamification can be enacted in the future.

A History of Gamification

To understand the problems with the existing framings of gamification one must first look at the history of the term, the popular definitions that have circulated, and crucially the controversies that have emerged. It is a complex history where debate occurs across, and between, a range of different disciplines all seeking to discursively construct gamification in their own ways, to legitimise their approach or to defend their conceptual territory. Rather than offer a comprehensive review of all gamification literature, this paper will focus on a small number of crucial pieces of work that have functioned to define (or critique) the concept of gamification. This is not a complete account of the definitions and debates, but is illustrative of the underlying issues and tensions that need resolving.

The term gamification is relatively recent one. It was first used by in 2002 by Nick Peeling (Marczewski, 2012: 3) a programmer and consultant who used it to describe his idea that electronics manufacturers could improve their products by building on the lessons learnt by the games industry. Its current meaning however is even more recent. In 2008 Bret Terril from Zynga games used the term to describe "taking game mechanics and applying them to other web properties to increase engagement." (Terrill, 2008). Yet it wasn't until 2010 that the term gained widespread usage. The precise definition of the term however is still highly debated, with the different overlapping disciplines surrounding gamification: game studies, marketing, human-computer interaction, game design, etc. all offering variants on the theme (cf. Fitz-Walter et al., 2011, Huotari & Hamari, 2011, Nicholson 2012, Zichermann & Linder, 2010).

One of the most widely cited definition comes from Deterding et al. who state that "'gamification' is the use of game design elements in non-game contexts" (2012, 10). This definition, whilst simple, contains a number of key attributes that differentiate gamification from other similar pedagogic and ludic processes. Deterding et al. are precise in their choice of language in this definition. They distinguish between games and play, arguing gamification is based on the former which is more structured and formal, not the latter, which is more loosely defined, freeform, and improvisational (Deterding et al, 2012: 11). Their use of the term 'element' reflects that gamification does not employ "fully-fledged games" for non-entertainment purposes (as opposed to serious gaming) but rather it mobilises small components of a game experience (Deterding et al, 2012: 11-12). They also seek to define what they mean by design (interface design patterns; game design patterns or game mechanics; design principles, heuristics or 'lenses'; conceptual models of game design units and game design methods

and design processes) and 'non-game contexts': any situation where the user has no cultural expectation of a game experience (Deterding et al, 2012: 12-13). This definition is representative of the standard frame through which much of gamification is understood.

The strength, and weakness, of the Deterding et al. definition is that it is abstracted from the specificities of gamification. This broad approach means they are not proposing an overly simplified account of the practice, but it also means they do not attempt to articulate or categorise the kinds of game design elements that are employed in gamification, nor the kinds of non-game contexts in which the elements are often employed. This approach functions well to produce a non-controversial definition, but is less useful as a means of understanding the details and realities of the processes of gamification, leading other gamification theorists to seek less abstract accounts.

One notable alternative definition that addresses the specificities of gamification practice comes from Gabe Zichermann (2011). Zichermann, a leading gamification proponent, seeks to go beyond generalities and highlight the actual practices and purposes of gamification. He argues that:

> Gamification can be thought of as using some elements of game systems in the cause of a business objective. It's easiest to identify the trend with experiences (frequent flyer programs, Nike Running/Nike+, or Foursquare) that feel immediately game-like. The presence of key game mechanics, such as points, badges, levels, challenges, leaderboards, rewards, and onboarding, are signals that a game is taking place. (Zichermann, 2011)

Where the definition offered by Deterding et al. lacks specifics, Zichermann's articulation pinpoints precise game mechanics that are being used and the purpose behind the process. Whilst his assertion that gamification functions in the 'cause of a business objective' ignores non business uses of gamification such as in the educational and health spheres (so is far from a universal framing), his emphasis on mechanics such as points, badges, levels, challenges, leaderboards, rewards, and onboarding is reflective of, and corresponds to a significant portion of broader gamification literature. Indeed a strong emphasis has been placed on the integral nature of these mechanisms to the process of gamification by many theorists (for example: Fitz-Walter et al., 2011, Huotari & Hamari, 2012, Muntean, 2011, Nicholson, 2012, Paharia, 2011). Likewise a survey of leading gamification service and application such as *Badgeville*, *Bigdoor Media*, *Bunchball*, *FourSquare*, and *MyTown* also reveals that these mechanics are crucially important to the dominant conventions of gamification. However whilst Zichermann's emphasis on points, badges, levels, challenges, leaderboards, rewards, and onboarding is far from unusual, it is not without debate.

Critiques of Gamification

Alongside, and in response to, the popular positioning of such features as points, badges and levels as central to gamification theory and practice, has been a growing resistance to what is seen as a simplistic conflation of these mechanics with the concept of gaming. The notion that mobilising these mechanics transforms something into a game has been significantly critiqued. Indeed Zichermann's definition has been a focal point for critique.

One of the most important critiques of gamification generally, and Zichermann specifically, comes from media theorist and game designer Ian Bogost. Bogost's

'Pervasive Games: Exploitationware' (2012) neatly encapsulates, and informs, the key debates occurring around gamification, and articulates some significant objections to the process. In particular Bogost takes issue with gamification's uses of points, level, badge, and similar mechanisms, and the assumption that these things are what makes a game a game. This is part of Bogost's broader critique of the depiction of gamification as being game-like. Bogost challenges the rhetorical framing of gamification, even critiquing the term itself, arguing that it should in fact be more properly termed 'exploitationware'. Bogost argues that the term gamification mobilises a specific discursive construction to legitimate an exploitative use of minor game mechanisms to control and dictate 'player' behaviour. For Bogost the terms gamification and gamify function to normalise and hide the sinister nature of the process. The combination of the word game: with its 'mysterious power' to captivate and enthral, with the suffix 'ify': which implies an ease and straightforward application, suggest that to gamify something is a simple and unproblematic task (Bogost, 2012). Bogost fundamentally disagrees with this, he suggests that creating a game is anything but simple and in using the term gamification, and in the practices it embodies, gamification proponents have misunderstood the very basics of what a game is.

Bogost aligns himself with critics of gamification who argue that:

> gamification mistakes games' secondary properties for their primary ones. It insults and violates games. It confuses the magical magnetism of games for simplistic compulsion meted out toward extrinsic incentives. (Bogost, 2012)

Indeed he furthers this argument, positing that gamification takes only the most superficial and insignificant elements of games and assumes that it is all there is to gaming, through a detailed rejection of Zichermann (whom he refers to as "the gamification movement's Dark Lord") and his aforementioned conceptualisation of gamification where "key game mechanics, such as points, badges, levels, challenges, leaderboards, rewards, and onboarding" are used, Bogost argues:

> Note how deftly Zichermann makes his readers believe that points, badges, levels, leader boards, and rewards are 'key game mechanics.' This is wrong, of course -- key game mechanics are the operational parts of games that produce an experience of interest, enlightenment, terror, fascination, hope, or any number of other sensations. Points and levels and the like are mere gestures that provide structure and measure progress within such a system.

For Bogost there is the belief that the gamification movement has missed the important elements of games and chosen just to focus on the trivial, the veneer of the game rather than its core qualities, signifying systems, not the gameplay itself. For Bogost the use of the word 'game' in the term gamification is misleading as it the mechanics of gamification have little to do with the experience of playing games.

Bogost is not alone in his argument, gamification critic Alan Chroney (2012) offer a similar perspective when he claims:

> Gamification entrepreneurs will say they are using "techniques that game designers [have] used for years to motivate behaviour - points, badges, levels, high score tables and virtual goods" (Paharia, 2011). The truth is that these techniques are not core characteristics of video games, nor are they exclusive to video game design. In reality, gamification strips games of

their essential characteristic: content, and replaces it with a brand. (Chorney, 2012: 3)

Chorney here is just as dismissive of gamification as Bogost, and like Bogost he sees it as an exploitative practice looking to target the unsuspecting with mechanisms designed to make a commercial endeavour look like an entertainment experience (Chorney, 2012: 3).

Likewise fellow critic Margaret Robertson argues that:

> [The] problem being that gamification isn't gamification at all. What we're currently terming gamification is in fact the process of taking *the thing that is least essential to games* and representing it as the core of the experience. Points and badges have no closer a relationship to games than they do to websites and fitness apps and loyalty cards. They're great tools for communicating progress and acknowledging effort, but neither points nor badges in any way constitute a game. (Robertson, 2010)

Whilst Robertson is somewhat less damning in her condemnation of gamification than Bogost or Chorney, she believes the essential idea is one with potential but that current examples of gamification that rely of giving points as a reward are misguided. She suggests that gamification designers are actually self-deluded, they don't understand games enough to understand what they are doing:

> Gamification is an inadvertent con. It tricks people into believing that there's a simple way to imbue their thing (bank, gym, job, government, genital health outreach program, etc.) with the psychological, emotional and social power of a great game.

For Roberston, contemporary gamification would be better off termed 'pointsification' because it about points rather than gaming. She ends her argument by stating that "Games are good, points are good, but games ≠ points." (Robertson, 2010).

What we can see then is two broad schools of thought when it comes to gamification. One which believes that mechanisms such as points, level, badges and achievements, can function to produce a game like experience in a non-game context. The other, which sees the mechanics as secondary to true gaming, and as such disputes the current framing of gamification and indeed the very validity of the terminology.

Reconceptualising Games

This debate highlights the problematic nature of the term gamification and the need to reconceptualise it in a more sophisticated way. However the solution is not as simple as re-terming gamification exploitationware, or even pointsification. The debate around defining gamification has ultimately been a debate about defining games and as such it is only by producing a more expansive understanding of games that we can better conceptualise what is occurring (and could occur) with gamification.

This debate is an argument over what the fundamental core features of games are, and what features are ancillary, inessential or insignificant. This kind of discussion is not new; well before the term gamification was coined the definition of the term game was being actively contested. Indeed much of the early scholarship in the game studies discipline was devoted to exploring this issue (cf. Aarseth, 2001, Eskelinen, 2001, Juul,

2005, Salen and Zimmerman, 2004), and before that it was a philosophical question explored by authors ranging from Caillois (1961), Huizinga (1955), Suits (1978), and Wittgenstein (1953). As with past debates around the characterisation of games (for example the ludology versus narratology debate that dominated game studies in the early 2000s, (Aarseth 2004, Murray, 2005)), the gamification debate demonstrates a need to move beyond rigid definitions and terminology to advance our conceptual understandings. This debates, as with those that have preceded it, emerges from different disciplinary framings, and different conceptual goals.

The model Zichermann, and his fellow likeminded gamification proponents are offering is a reductive reading of what a game is when they conflate gaming with points, levels, badges, etc. This is problematic as it ignores the potential sophistication and true complexity of the form. Yet for these gamification advocates the model has significant utility, it offers easy to understand concepts that can be applied to a wide range of contexts. As such it also functions to make gamification a concept that is easily explainable to those not versed in the nuance of gaming.

Likewise for critics of gamification their framing of the debate functions to affirm their own theoretical territory, i.e. they seek to narrow what is understood as a game and as such keep it part of the domain of traditional game designers and theorists. However, in doing so, the critics of gamification ultimately oversimplify their own object of study. The critiques offered by Bogost, Chorley and to lesser extent Robertson fall into a reductionist trap when conceptualising what a game is. As with any definition that seeks to identify and differentiate between primary and secondary game elements it inherently seeks to marginalise and discount the power of the so-called secondary elements. In marginalising mechanism like points and levels these theorists (just like those they are critiquing) miss the complexity of games, particularly in terms of pedagogy.

Bogost in particular has painted only a partial picture of the game experience to further his argument. What Bogost ignores when he dismisses such mechanics as points and levels is the ludic function of these elements and crucially it is in this ludic function that we see the core, not only of gamification, but of all gaming. Games function through pedagogy. Far from being "mere gestures that provide structure and measure progress" (Bogost, 2012) these elements are intrinsically important components of the play experience. Points and levels are reflective of the basic pedagogic structures in games that train players into 'correct' behaviour. They are not an afterthought for designers or players but part of the informational schema that shapes the act of play. The gamification movement, and its advocates like Zichermann may not fully acknowledge the complexity of the pedagogic systems modern games use, but they at least recognise the power of games to teach, Bogost does not acknowledge this in his critique of gamification.

Games and Pedagogy

Almost all play functions through teaching the player the rules. With most forms of traditional play, this is a straightforward task, rules are often listed in an instruction booklet, on the box, or taught verbally. The player learns these rules, so that they can successfully participate in the game. In video games this process can be somewhat more complex because the rules are often not made explicit. Yet video games ask players to engage in unfamiliar worlds, perform tasks and understand logics of which they have little or no prior skill (from being soldiers in warzones, to criminal outlaws, commanding vast army and empires, to piloting planes) these are not skills players simply have naturally, these are skills that need to be learned, and consequently that games need to teach. Games therefore have to train the player into the 'correct'

practices of play, these are the strategies needed to participate in and succeed at the game (Friedman, 1999; Galloway, 2006; Tulloch, 2014). Video games do this because they need players to play in specific ways: in order to create a certain experience, tell a certain story, or even just to be manageable to the computer system and the limited design resources. For game designers it is essential for players to learn and perform the correct play practices and strategies, so that their game experience can align with designer intent, and so the player can progress through the world that has been created. Games thus rely on training player to perform the tasks in specific ways. They allow the player a certain degree of agency but this agency is within boundaries that the game system can handle. At the core of game design therefore is training and games mobilise sophisticated training techniques, both overt and subtle that shape player behaviours and standardise them.

Amid all the definitions of gaming that have been proposed few however emphasise the pedagogic aspect. One theorists who does, however, is game designer Raph Koster. In his 2003 Austin Games Conference keynote (the origin of his ideas in his acclaimed book *A Theory of Fun for Game Design (2003a)* Koster argues that:

> "all games are edutainment. Some games teach spatial relationships. Some games teach you to explore. Some games teach you how to aim precisely." (Koster, 2003b: 19 - 22)

Koster's focus is both on the ways games teach the player to play and how they teach broader skills that are applicable beyond games. He argues that the enjoyment of games, the fun, comes from the process of learning and mastery, and that once the player has learnt all they can from a game, once it is mastered it stops being fun. Koster's *Theory of Fun for Game Design* is, however, as the name suggests an exploration of the concept of fun, not a thorough account of the mechanisms through which games teach their players and despite the influence of Koster's work, those who have built on his ideas tend to focus on fun rather than the mechanics of learning. Frameworks like the popular '8 Kinds of Fun' (Hunicke et al. 2004) have developed through and alongside Koster's work, whilst the mechanisms of training has been far less explored. Beyond Koster the way in which games, particularly video games, train players, is largely ignored or overlooked. Whilst this is unfortunate in the broad context of contemporary debates around the video game medium, as it closes of a useful avenue for exploration, it is disastrous for discussion of gamification, as it denies a fundamental heritage and an opportunity to develop the practice. Indeed it is only because, theorists like Bogost ignore the training process in games that they can make the claim that points and levels are secondary game elements. Whilst Bogost is correct to question the simplistic conflation from many proponents of gamification of games with points systems, levels (games are a lot more than just these elements) these elements need to be understood as part of the process of training. Points and levels are (basic) examples of two of the most important training schemas in video games: 'numerical signifiers' and 'progression'. Far from being secondary these elements allow games to offer the complex and unfamiliar experiences they do.

Numerical Signifiers

Bogost's dismissal of points as simply a system that provides structure and measures progress (2012) underestimates the complex role points play in gaming. More precisely, in seeing the measurement of progress as an unimportant process Bogost is ignoring the feedback loop at the centre of the game/player relationship. In many games points do

measure progress, but in doing so they are providing constant corrective feedback to player on their play strategies. Players know they have achieved well, i.e. played successfully within the privileged norms of the game, if they receive a large number of points or achieve a high score. Points are not just a record of achievement, as Bogost implies, but a signifier of correct play practice. Points in this context are far from a secondary property, they are absolutely primary to the construction of the play experience; without them players would have significantly fewer indicators of how they should approach the game.

Not all games use points of course, and this is perhaps the thinking underlying Bogost's resistance to understanding them as a key gaming mechanic. However whilst many video games and genres thrive without the use of a points mechanic, nearly all use a comparable system for signalling correct play practices. One such example that is perhaps more prevalent than points is 'health' and 'lives'. A vast number of video games rely on health as the key mechanism of player challenge (to succeed you have to learn to stay alive), but also the core mechanic of game training. A player knows they have done the wrong thing if they lose health or die. Injury to the player character is an unambiguous signifier of incorrect action in the game. Whilst the injury is in no way 'real' or physical this informational schema resonates on a powerful cultural and biological level; players know without being told that they want to avoid injury and death for their character. The scale of the injury that happens in the game also often functions to inform the player how incorrectly they have performed. It shows them the magnitude of 'improvement' to skills or tactics required: a small loss of health requires a minor refinement, whereas death of the main character may suggest a significant correction is needed. Game genres vary as to how they represent this numerical data, some do this through actual visible numerical systems like health as a percentage, and others use graphs and charts (fighting games for example nearly universally have player health a bar graph at the top of the screen). Regardless however of the means of representation the function is the same, it shapes player behaviour by punishing deviation or transgression through virtual violence and injury and as such is integral to the act of play.

Other examples of numerical systems used to signify correct (and incorrect) play include virtual money, experience points, time remaining and even the number of military units available. Numerical feedback is so popular because it functions effectively in this role as it is easy to interpret and understand, minor increases and decreases are easy to observe and quantify. Games designers employ these different numerical systems in different game settings to appear as natural and normal parts of the gameworld (most games try not to draw attention to their pedagogic mechanism, to avoid spoiling immersion or potentially fostering resistance and counterplay) but underpinning them all is the same function: numerical signifiers give players real-time feedback on how well they are doing in the game, and to help them refine their technique in order to succeed.

Points are one of the most basic examples of numerical signifiers. Indeed as games have got more complex designers have found it necessary to move beyond these simple mechanisms, points are far less common in current games than they once were. As prominent features of 70s, 80s and 90s gaming, they (along with levels, discussed below) are often seen as, or used to designate 'retro' in contemporary gaming. One of the problems with point is their lack of flexibility, they are unusual within signifying numerical systems because they (commonly) only increase; they cannot be lost or traded or used as currency. Alternatives signifiers to points like the aforementioned health, money, experience points, and units often require the player to sacrifice, or risk sacrificing, in order to progress. For example, in a first person shooter the player may

need to assess the probable cost in health of a sprint through an enemy infested room, versus a methodical targeting of all enemies. Such evaluations force the player to reflect carefully both on their own abilities, and on the basic rules and logics of the game. Such systems thus have a double pedagogic value, where points just reward correct actions, other more complex numerical systems like health function not only as a signifier but also a catalyst for reflection and deeper engagement. In this way points are a far less sophisticated and often less power numerical signifier. They are however not secondary elements, when used they are key to the teaching of correct play practices.

Progression

Bogost is as dismissive of levels as he is of points, but like point, levels are an example of a crucial process to the game play experience. Indeed levels function in a near identical way to points, they operate as markers of progression, and progression is another key signifier of correct action in a game. In this case rather than success being depicted numerically it is depicted through spatial, narrative or achievement schemas. Players know they are playing correctly when they make it to the next level. Again this is simple but crucial pedagogic mechanism in video gaming. Progress is fundamental to all games, and in the vast majority is clearly marked. This is one key reason (apart from technical limitations) levels have been such a popular design trope in gaming, by splitting the game experience into discrete sections the player can clearly see their progress, they can self-monitor their performance, and reflect on which strategies have been successful and which have failed.

Progression again works clearly as an unambiguous signifier because it is culturally familiar, we expect an entertainment form to progress, to build to move on, be it book, film, TV show or video game we are accustomed to our entertainment developing and advancing. Our desire for new experience also pushes us through a game, seeking progress, willing to take on the required play practices in order to progress.

However much like points, levels are increasingly falling out of favour with game designers. There are many reasons for this including improved technological affordance making dividing game into discrete levels less necessary, but there are more complex reasons as well. One such reason is that levels force a degree of linearity on a game. If a player moves through the game level by level then the progression, whilst easy to understand, leaves the player little choice or agency. As many games embrace non-linear stories and worlds, level become a less useful marker of progression. Other markers of progression are thus employed in these circumstances such as levelling up character skills, unlocking items, attaining achievement badge and trophies, weapons, moves, or perhaps most commonly moving the narrative forward. These system allow for the variability in play styles and interest whilst still offering clear signification of progress. They are more compatible with a gaming system that gives the player a degree of autonomy and self-direction. As such, they are useful as pedagogic tools as they encourage the player to follow their interests whilst still training them to keep within the broader scope of correct practices.

However no matter what marker of progress is used be it levels or a more complex system, they all function to signify, reward and correct play practice. They are crucial pedagogic mechanisms. And whilst like points, levels, may be a simple examples they are representative of range of training mechanisms that are far from a secondary.

An Alternative Pedagogic Heritage

Once we understand that points and levels are not just 'mere gestures' but rather pedagogic mechanisms (however rudimentary) we can start to see new possibilities for gamification, and the missed opportunities in current gamification. Bogost, and other gamification critics, are not alone in overlooking the true pedagogic significance of gaming mechanics like points and levels, neither side of the gamification debate has adequately acknowledged the pedagogic core of video gaming. Gamification critics miss the pedagogic techniques intrinsic to video gaming and thus fail to see the connection to gamification. Conversely, by emphasising the 'new contexts' many gamification advocates miss an opportunity to conceptualise gamification within a much longer heritage, and as such overlook important work already done in the area. The difference between arguing that games can be used for pedagogic purposes, and the understanding of games as intrinsically pedagogical, may appear minor, but it is crucial. In positioning gamification as a new discovery, a departure from traditional gaming's core principles, gamification advocates become pioneers of a new field and can handpick the theory from game studies and game design that fits their purpose. The complex debates around such things as the ethics of games, the cultural specificity of play, gender differences in play, what kind of stories and experiences can be usefully conveyed through games, and many other critical debates of the last 20 plus years, can be largely sidestepped.

If current conceptualisations of gamification, from both advocates and critics, are limited because they fail to understand the full scope of what is occurring, and both sides are failing to articulate the aforementioned pedagogic dimension, then a new framing of gamification is required. Rather than understand gamification as the use of game design elements in non-game contexts, it is more productive to see it as the deployment of an alternative pedagogic system developed for, and refined in, gaming, in non-game contexts. Put simply: gamification is a form of training built upon the techniques used in, and heritage of, games rather than traditional pedagogy. In this conceptualisation of gamification the key term is heritage. If we recognise gamification is not a new pedagogic use of game mechanics, but rather the continuation of a long running practice, then it allows us to situate gamification as part of an established tradition of theory and design. It allows us to understand gamification as a form of pedagogy that that is not defined by the traditions of western institutional education, e.g. schools and universities (this is not to say that traditional pedagogy has not informed the training mechanism of gaming, it certainly has had a great influence, however the different cultural, economic, structural and material contexts have produced a form of pedagogy that are not defined by these traditions). It presents us with a 'new' discourse and set of conceptualisations through which we can understand gamification. It shows gamification to be the result of over fifty years of refinement of pedagogic technique in video game design, and an even longer history in traditional play. Once we recognise the teaching processes inherent in games, then we can see them as an unusual but important pedagogic system.

The Power of the Gaming Pedagogic Heritage

What makes gamification so unusual is also what makes it so important, the power and uniqueness of gaming pedagogy, comes from its focus on engagement, and this is why gamification has proved so popular and productive. At the heart of gaming, and consequently its pedagogic tradition, is an emphasis on player (learner) enjoyment. Game designer and theorist Ernest Adams articulates the centrality of player enjoyment when he argues a "game's primary function is to entertain the player, and it is the

designer's obligation to create a game that does so." (Adams, 2009: 30). It is this emphasis on enjoyment and entertainment that distinguishes gaming pedagogy from many other pedagogic models. Whilst fun and entertainment are part of numerous pedagogical frameworks, the emphasis on learning through play in these systems is often at its strongest with early childhood, and steadily decreases as the child get older, with little emphasis for adult learners. The importance of play to early childhood education can be seen in academic literature (Fisher et. al., 2011), governmental frameworks (Department of Education, Employment and Workplace, 2009), and in the emphasis on play in a range of education models such as the Montessori system (Lillard, 2013). This same prominence of play cannot be seen in the literature, policies and practices surrounding secondary, tertiary and adult education. Video games are as such unusual amongst pedagogic systems that teach adults (one recent study showed 71% of America video game players are 18 or above (Electronic Software Association, 2014: 3)) in this emphasis on entertainment as a "primary function". The techniques they mobilise, the traditions of the pedagogic heritage they draw on and inform, are ones designed to produce an entertaining experience, whilst simultaneously functioning to train the player. This is what makes gaming pedagogy distinctive and valuable, and why gamification must be understood as part of this heritage not just a recent invention.

The centrality of enjoyment and engagement in gaming pedagogy makes it uniquely effective in situations where other forms of pedagogy may struggle. Techniques of gamification have often proved most productive in circumstances when participation is voluntary, such as in marketing promotions (Huotari & Hamari, 2011) and personal health campaigns (McCallum, 2012); and circumstances where engagement is perceived to have declined, or in need of improvement, such as many contemporary educational contexts (Fitz-Walter et al., 2011). If we understand gamification not just as a set of mechanics but as a heritage, and an academic discourse (based in game design and game studies paradigms), the reason for this becomes easily articulable. As a practice gamification does not assume engagement and interest, but instead seeks to generate it. The key reason for this is the voluntary nature of gaming. When French sociologist Roger Caillois sought to define the act of play the first characteristic he describe was that it is 'free' in that "playing is not obligatory; if it were, it would at once lose its attractive and joyous quality as diversion" (Caillois, 1961). As a basis for a pedagogic model then, gaming comes from a very different setting than most traditional pedagogy. In most countries around the world some formal education is mandated, often for a period of approximately 10 years; in some countries this is then coupled with social and economic pressures encouraging higher education. These are highly distinct contexts, within which pedagogic models become established, and it has inevitably led to different techniques and models being employed. For games maintaining engagement and enjoyment is critical, for traditional pedagogic institutions these factors are less important. We can see then why, for contemporary situations with voluntary participation or low engagement, gamification (and the heritage upon which it draws) provides a powerful tool set.

Gaming is an unusual pedagogy in its emphasis on entertainment. The power of this model however is not that the player learns despite the primacy of entertainment, but that the play learns because of the primacy of entertainment. Within a gaming heritage, entertainment and learning are not discrete processes, they are one and the same. Play is learning, learning is play. The challenge and pleasure of a well-designed game come is learning the games rules, logics and systems (Friedman, 1999: 136). For gamification to be successful then designers must recognise this tight relationship between entertainment and learning. More than this however, for gamification to be successful designers must recognise that the tight relationship between entertainment and learning

is neither inevitable nor coincidental, it is the product of a long process of development and fine-tuning. It is for this reason that the wholesale lifting and transposition of elements of gaming into non-game contexts is likely to be at best a partial success. Doing so is a decontextualisation of individual processes from the broader heritage; in short it is a process of ignoring the uniqueness and power of the gaming pedagogy. For gamification to be successful this pedagogic history must be acknowledged and gamification itself must be conceptualised as the engagement with this heritage.

Gamifying Difficulty

The value for designers and theorists of reconceptualising gamification as a pedagogic heritage, not just a set of techniques, is best seen through a brief analysis of a specific example. There are countless examples that could be discussed, but here I will focus on the question of 'difficulty', it is an example that simply and easily shows how reframing gamification in this way opens up new possibilities and understandings, both in terms of theory and practice.

Like in all forms of pedagogy one of the key challenges in game design is the question of difficulty: how easy or hard should the tasks be, how does one challenge without frustrating, how does one teach without alienating. Gamification is no different; whatever form the gamification takes designers want players engaged, challenged but not discouraged, yet an understanding of gamification as a series of mechanisms and techniques gives us little in the way of guidance or insight into the issue of difficulty. Indeed the question of how we could think about difficulty is outside the scope of traditional definitions and discussions of gamification that focuses on points, levels, badges, etc. However if we understand gamification as a form of training built upon the techniques used in, and heritage of, games rather than traditional pedagogy, then we find not only a framework that incorporates difficulty but a rich academic discourse for understanding its complexity. We can see that in fact many game design texts implicitly and explicitly theorise the question of difficulty in relation to that core focus of gaming: player engagement.

As one would expect given the voluntary nature of play, most game design theory tends to frame the question of difficulty as an issue of enjoyment. Adam's claims that "[to] be enjoyable, a game must be balanced well—it must be neither too easy nor too hard" (2009: 324). Such a statement, whilst simple in itself, hints at how established complex theorisations of engagement, like Csikszentmihalyi's (1990) concept of flow (an optimal state of immersion and focus), are in this field (see Chen, 2007 and Cowley et. al., 2008 for more examples of the impact of flow theory on video game design and analysis). Flow theory, however, has a wide reach across many disciplines and pedagogic contexts, the real utility of the game design heritage that I wish to highlight here, comes from more detailed analysis and modelling of challenge in gaming, such as that offered by Jimmy Marcus Larsen in his 2010 work on difficulty curves. Larsen presents an analysis of the way in which different models of difficulty alters the player's experience of the game. Larsen analyses six types of difficulty curve, which represent the challenge the player faces as he or she progresses through the game. From fixed linear (difficulty remains the same throughout game), to fix increasing linear (difficulty increases at a set rate) to more complex models like fixed logarithmic wave (difficulty increases in steps towards a maximum), and interval logarithmic widening wave (difficulty generally increases towards a maximum but is randomised within a set range to provide unpredictability), Larsen evaluates the positives and negatives of each model in terms of player engagement and interest. The key thing here is not Larsen's specific concepts but the detail and richness of his work, and of the work of others like him (see, for example,

Salen and Zimmerman's discussion of dynamic difficulty (2004: 224) or Brycer's (2011) analysis of the effectiveness 'Darwinian difficulty' i.e. extremely high difficulty levels). If gamification is understood as a form of pedagogy informed by this kind of work, this heritage, then what we get is a very different understanding of the processes of learning; one that has a notably different emphasis from many other pedagogic models where difficulty is governed by other concerns such as what is age appropriate or what is required to give set skills. The question of the shape, and therefore effect, of the difficulty curve is one that is crucial to gaming but seldom discussed in other pedagogic traditions. Most pedagogic traditions, especially institutional frameworks (school, universities, etc.) uncritically mobilise fairly linear models of difficulty, where, as we have seen, the gaming heritage provides a powerful and nuanced alternative.

Within the conceptualisation proposed in this article, the gamification of a task's difficulty can be understood as a process whereby an existing model of conceptualising difficulty from game design/game studies is mobilised in a non-game context. This gamification of difficulty has very little to do with the definitions offered by Zichermann and likeminded theorists. It is not about simply using points, levels or leader boards, but rather it is about drawing on the work of theorists and game designers like Larsen and building upon their lessons. One does not have to rely on points etc. to make a task more gamelike, the application of an interval logarithmic widening wave difficulty curve (Larsen, 2010) for example, can be just as, or more, successful. The gamification of difficulty is about recognising difficulty as part of play's pedagogic process and understanding the intellectual history behind it. Put simply, good gamification should not indiscriminately recontextualise gaming elements, it needs to understand and build upon the underpinning logics and philosophies. By reconceptualising gamification as a pedagogic history based in the academic disciplines of game design and game studies we can encourage this more sophisticated approach and emphasise and reinforce the links between game mechanics and techniques and the contexts, rationales and desired outcomes that produced them in the first place.

Whilst the issue of difficulty effectively demonstrates the power of gaming as an alternate pedagogic framework, it is just one example amongst many that could have been analysed here. Game design and game studies offer innumerable other important frameworks expansions and challenges to traditional pedagogic discourses, from new conceptualisations of the relationship between spatiality and agency (Nitsche, 2008; Rogers, 2009), to rethinking pedagogic temporality (Aarseth, 1999; Juul, 2004); from examining the relationship between narrative and interactivity (Jenkins, 2004, Murray, 2005), to recognising the complexity of gender performativity (Kennedy, 2002; Taylor, 2009); from understating the challenges of resource management (Costikyan, 2005) to allowing for different types of engagement and the different pleasures they produce (Bartle, 1996, de Peuter & Dyer-Witheford, 2005), to draw on just a few better known pieces. All of these ideas can provide much needed contributions to thinking about how we learn, why we learn, and what it means to learn. Whilst rarely explicitly about pedagogy these theories implicitly offer new and unique ways to understand, and shape, practices of learning and interacting and can be mobilised to produce the desired profitable consumers, obedient and efficient workers, healthy citizen, and knowledgeable students for which gamification strives. To reach its full potential, gamification must be understood as the drawing on the rich theoretical heritage game design and studies offers, and the recognition that in doing so one is accessing a developed and distinctive pedagogic paradigm.

Conclusion

Gamification as a practice has existed far longer than the term itself. The use of the pedagogic mechanisms of games to shape understandings and behaviours is far from new. What the terminology of gamification offer us is an opportunity to recognise and integrate a range of potentially disparate practices and techniques into a cohesive framework. It allows us to see the connections and overlaps between such things as character health, narrative progression, and difficulty curves, and recognise that these are all processes and mechanism of pedagogy; a pedagogy where entertainment is entrenched and engagement fostered.

The techniques commonly associated with contemporary gamification: points, levels and leaderboards, are but simple examples of a much richer heritage. A heritage designed to engage and train players who are voluntarily interacting with a complex system. As gamification develops we are likely to see more sophisticated mechanisms and techniques become popular. Gaming has a deep history of refinement and thought about how to appeal to players, through challenge and reward, through progression and feedback. All these mechanisms can be drawn on and applied in other circumstances in ways that go well beyond points, levels and leaderboards. Most video games offer complex numerical economies, patterns of progression, precise difficulty curves, involving scenarios and stories, carefully constructed spatial and temporal dynamics, etc. It is through embracing these possibilities that gamification can become a richer, more nuanced, and more effective practice. The power of gamification is in its ability to engage an audience, to do so with any longevity for complex tasks requires more complex techniques than simple points and linear progression. If gamification advocates and practitioners move beyond the rhetoric of education revolution and instead embraces gaming's rich pedagogic heritage then we may witness the real potential of gamification be realised. Understanding gaming as a pedagogic process, helps us reconceptualise gamification as an extension and recontextualisation of it methods and philosophies. This not only offers us a rich lineage of examples to draw on, but helps us understand how and why gamification is successful (and how and why it may fail). It gives us a deeper academic framework through which to view contemporary gamification, and the foundations to build a more sophisticated and nuanced version.

It is easy to dismiss gamification as a fad or a gimmick, but to do so would be to miss an important opportunity to re-evaluate contemporary pedagogy. Video games are now one of the most popular entertainment forms; players of all ages are investing more and more time in these virtual worlds. But these are not virtual worlds that are innately familiar to their players, these are world with rules, goals and strategies that the player must learn. Video games train players into how to understand and engage with them, they use numerical feedback, progress and other techniques in order to shape the player's play practices. The current version of gamification we are seeing offers a rudimentary use of these same mechanics, but it has been held back by a lack of recognition of the broader contexts within gaming, and a lack of realisation of the significance and scope of what is occurring. It is also hampered by models of gaming that assume pedagogy to be a secondary process, and theorists who are thus resisting gamification due to a belief that it is not game-like enough. Whilst there are valid ethical issues to think through (as there are with any pedagogic paradigm) dismissing gamification for its lack of gameness is reductionist, and counterproductive. Gamification practices are building on the unacknowledged heart of gaming, its training mechanics, and are mobilising these techniques outside traditional play. Further work needs to be done by gamifiers to incorporate the more sophisticated mechanisms from video gaming (and this is where game studies theorists can be of great worth) but even

the basic gamification we see today offers a glimpse of an alternative way of thinking about education, marketing, health and other areas, tailor-made for the 21st century and a new generation of learners.

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