

Reification and Real Life Goals as Facilitators of Progression in Digital Games

Niels Peter Rasmussen

nrasmu10@student.aau.dk

Sandra Dogg Gudnadottir

ssigbj09@student.aau.dk

Christian Toft

ctoft10@student.aau.dk

Thomas Saaby Nielsen

tsni10@student.aau.dk

Henrik Schoenau-Fog

hsf@create.aau.dk

Department of Architecture, Design and Media Technology,

Section of Medialogy, Aalborg University, Copenhagen,

A.C. Meyers Vænge 15, 2450 Copenhagen, Denmark.

## Abstract

Gamification is the idea of using game design elements to better motivate and engage people in accomplishing objectives in their everyday lives and is among some scholars believed to be a key factor of motivation in real life in the future. However, so far it has been difficult to assign specific values to such real life achievements and make that value redeemable within a digital game. This paper investigates how real life goals may add benefits to games much like when contemporary games offer an alternative of monetary payment, to unlock novel features and facilitate progression in the game. For such an optional currency to be meaningful, there is a need for a discussion on how to determine, assign value of and validate these real life achievements. This paper aims to discuss the use of known activities from social media and ubiquitous gaming to evaluate and describe the value for real life activities and provide a balanced discernible outcome that can be used as an alternative to payment or mundane tasks which has to be performed in order to progress in games.

*Keywords:* Gamification, Reification, Digital Game, Continuation Desire, Player Engagement, Real Life Goals, Productivity

## Reification and Real Life Goals as Facilitators of Progression in Digital Games

**Introduction**

When playing a digital game, events and interactions between people in real life that are not mediated through digital communication channels or fictional environments are usually on stand-by. One might have some real life goals (RLGs) to achieve, but playing a game and accomplishing those goals have until recently been two separate activities. It is believed that the engagement people feel when playing games can be adapted to real life and is referred to as gamification which typically covers “*the use of game design elements in non-game contexts*”(Deterding, Khaled, Dixon, & Nacke, 2011, p. 1). The idea that the successful application of gamification, to otherwise trivial and tedious tasks, will increase happiness and productivity, is supported by McGonigal (2011).

Gamification has so far inspired a large number of game-like applications within various areas of productivity. Examples of popular and influential applications that have been investigated for the purpose of this paper are applied within areas such as task listing (Rexbox & SuperMono, n.d.), learning (Academy, n.d.), exercising (Endomondo, n.d.; Nike, n.d.) and socialising (Foursquare, n.d.). Along with these digital productivity applications digital games are also becoming increasingly popular through the rapid development of digital social infrastructure and mobile distribution channels that gain large amounts of users.

Common for most people that play digital games is that they also have meaningful goals in their real life, whether they work, go to school or do sports. While gamification is the application of game elements for non-game purposes as well as the notion of adding a game layer on top of whatever problem needs to be solved, the aim with our project is to add a *reified* layer to games and in that way add the value of RLGs in game contexts. In relation to this, we will introduce the use of the term ‘reification’, which when utilized in relation to games can be described as defining value to a RLG that otherwise has no measurable value in real life. Arguably this can be done by utilizing existing games that

people enjoy, and use the engagement from those games to achieve more when not playing the game by adding value to their favorite games. For example, children could progress in their favorite game by doing homework and thereby achieve points by accomplishing RLGs which are verified by their parents. The importance of this method lies in the belief that all computer games are destined to become boring over time as mastery and exhaustion of the game world is increased (Koster, 2005). Unlike typical gamification this method eliminates the need for individually developed game systems for specific RLGs, thus arbitrary RLGs could be used as novel elements and added incentives in any game the user is engaged in. The idea is that individually designed gamification systems for specific goals in life can be combined into a single system that defines, evaluates and validates RLGs and use the value as a benefit in digital games. By doing so the motivation and joy people experience when playing games may be used as an aspiration to achieve RLGs to gain benefits in the game experience. The intention of this paper is to explore the possibilities of this interplay between RLGs and digital games and to investigate how gamification can be used to utilize accomplishment of real life goals as means of progression in digital games via verification through social media. The paper will thus describe methods of evaluating user experiences of player engagement in order to investigate the validity of a game system, which uses RLGs as facilitators of progression in a digital game. It will furthermore discuss studies on how game- and real life activities are related, how RLGs can be categorised and how social media can be used to validate the accomplishments of those goals. Lastly it will introduce a case study of the prototypical system WooHoo! which has been developed to understand and explore the process of combining the achievement of RLGs with a gameplay experience where the system does not require the user to focus solely on a gaming activity in order to progress in the game. The system was tested over three consecutive days by eight test participants, all of whom every day provided feedback on their experience with the system.

## Background

The idea of using the accomplishment of a RLG to progress in digital games has been expressed by scholars such as McGonigal (2011) and Schell (2010) and is furthermore being backed from many different perspectives by literature and studies covered in McGonigal's work. Some (Chorney, 2012) do however remain critical to the rhetoric surrounding the topic and claim that gamification in its current form is inefficient at best, and suggest a closer connection to game content rather than the gamification mechanics. This chapter will describe a study that indicate a positive response to RLGs combined with a game environment, and also present a discussion of the term gamification that challenges the way gamification is developed most efficiently. It will furthermore describe the importance of being able to clearly define RLGs and how RLGs relate to games and why this is essential to why people engage in games.

## Related Work

A publication closely related to the case study of this paper indicate positive responses to the use of persuasive game design (Jianqiang et al., 2011). The study is focusing on altruistic behaviour and volunteerism work as the RLGs combined with a game. It introduced test participants (volunteers and non-volunteers) to a farming game on Facebook, which was based on the game Farmville. The game would help the users to find and participate in volunteer work in their local community. By participating in such activities the user would receive special items in the farming game. Although inconclusive, the study shows potential for such a system to affect the willingness among users to participate actively in volunteer activities.

In a discussion on whether problems can be solved by adding gamification mechanics alone Chorney (2012) states that “[...] *although these mechanics can be powerful tools and motivators they cannot be used to change the world [...]*” (Chorney, 2012, p. 11), the argument being that people play computer games for the game content, story and in-depth

experience. Chorney also concludes that gamification cannot replace existing computer games or make reality enjoyable the way computer games do, but gamification is, by Chorney, seen as a way of generating revenue, advertise, or gather personal information. This supports the idea of using existing games as the element of fun and enjoyment to motivate RLGs and focus on how to reify those activities. With this approach it should be possible to maintain the game content that people enjoy and using that as a motivation to accomplish RLGs.

### **Categorising a Real Life Goal**

This section will introduce studies related to the motivational psychology of setting up and achieving RLGs, how human psychogenic needs relate to games and how this was utilized in the case study. The focus will not be on whether a RLG is productive or not, as the goal should be anything the user sets out to do, both intrinsically motivated (self-defined) and/or extrinsically motivated (defined by the environment). The productive value of the goal is indifferent to whether the user is performing an activity due to pleasure or to attain an outcome.

In a related paper, Wiseman (2010) conducted a study into the psychology of motivation of more than 5000 participants who were attempting to accomplish their goals. There were a few things that the successful participants did do that the less successful did not do: Writing down a goal had a significant influence on their chances of success. Furthermore, breaking a goal down into smaller sub goals created a step by step process and thereby helped remove the hesitation that is associated with trying to achieve a goal (Wiseman, 2010).

In the context of this paper, a RLG can be either intrinsic (see figure 1 on page 7) where the goal and its success criteria are freely intrinsically defined by the user (e.g. “Run 5 km this week”) or the goal can be extrinsic (see figure 1 on page 7), where the goal is defined by others (environment), such as one’s superior at work, teachers or parents (e.g.

“Set up a conference meeting for my superior before the deadline”).

	Motivation	
	Intrinsic	Extrinsic
<u>Real Life Goals</u> (RLG)	<u>Self-Defined</u>	<u>Defined by the environment</u>

Figure 1. Intrinsically and extrinsically motivated RLGs

In the Player Engagement Process framework (PEP) (Schoenau-Fog, 2011b) goals and objectives are also the fundamental motivational factors of any game play experience. The PEP framework uses the concept of 'continuation desire' to investigate one facet of engagement in digital games which can be related to RLGs. The PEP framework is intended to describe, identify and assess the aspiration to continue playing in interactive experiences, including digital games and interactive storytelling applications and is mainly concerned with the in-game experience during play and identifies four components of player engagement: objectives, activities, accomplishments and affect. The PEP framework can thus also be used to understand and explore the processes of setting up RLGs as it describes the cycle of continuation desire as the following process:

- A motivation to begin playing the game.
- Objectives that the player want to accomplish and which are either set up by the game (extrinsic) or self-defined by the player (intrinsic).
- Activities triggered by the objectives the player pursues. This is what a player wants to do in order to reach the objectives and these activities can be divided into the following categories: solving problems, sensing the game's audio-visual and/or haptic feedback, interfacing through body movements, exploration of the game's possibilities and world, experimentation with the options, creation and destruction of in-game elements or entities, experiencing the story and characters and socializing with other players.
- An experience of accomplishment when the player achieves an objective, by

successfully performing activities: completion, progression or achievement.

- Experiencing affect as a result of performing activities or accomplishing an objective (either positive, negative or the feeling of e.g. absorption in the game).
- If the affect is supporting the desire to continue, the cycle can start over again by wanting to accomplish a new objective.

(Schoenau-Fog, 2011b)

When evaluating the WooHoo! system, which will be described in the case-study in the next chapter, the desire to continue also relies on whether the user is motivated to begin using the system and whether he or she is motivated to re-initiate the system after termination. Therefore the component of motivation can be added to the cycle of the original components (see figure 2 on page 8). This also means that when evaluating motivation as part of the continuation desire cycle, the term covers the triggers that would engage the user to start/re-initiate the system.

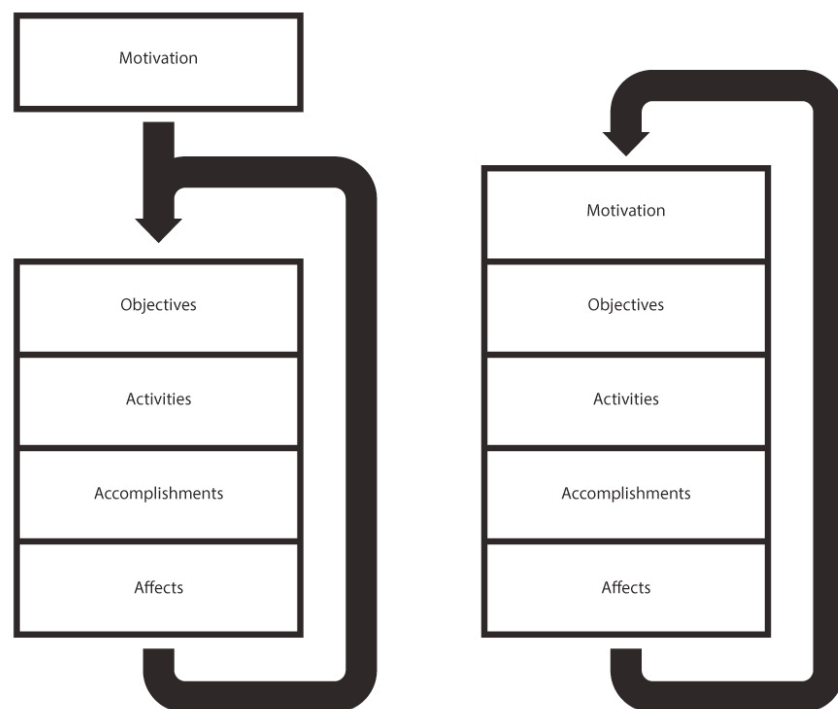


Figure 2. The cycles of continuation desire



It can be argued that the above mentioned objectives that players pursue and the activities they do when they want to continue closely relate to some of the psychogenic needs in personality defined by Murray (Ines & Abdelkader, 2011). Murray's psychogenic needs are categorised as being motivated by materialism, power, affection, ambition and information. Despite the similarities between Murray's needs and the activities listed as part of the PEP framework, the components can not be directly transferred from one framework to the other due to context. However, when investigating a way of evaluating RLGs, Murray's needs can help to understand how RLGs can be defined, as they describe basic psychogenic needs and are intended to cover all human incentives to do basically anything. When all RLGs can be categorised within a framework such as Murray's needs, it is possible for a RLG to be fitted in a simpler catalog system of activities that can be used in a game context. This is where the PEP framework delivers an idea of how game activities can be categorised. If done accurately RLGs could be used to affect a game experience with a higher precision in terms of which RLG fits certain game contexts. One example could be that all RLGs categorised as being related to health, would result in a player's desire to accomplish their objective of making their character in a game faster, stronger etc in order to achieve progression in the game.

In a system intended to be able to define and evaluate a specific RLG, the user must be able to set and describe a goal (possibly subgoals) in order to be able to help the user toward accomplishing that goal. A basic catalog of categories could be a way to differentiate goals from others in terms of the activity that has been exerted and the outcome experienced by the user. This catalog should be able to convert any RLG to game context value. This way some RLGs would relate better to certain games than others.

### **Social Media as Validation of Real Life Goals**

In the aforementioned study conducted by Wiseman (2010), results also show that participants that successfully achieved their goals were far more likely than others to tell

their friends and family about their goals. Wiseman suggests that avoiding change in your life and drifting back to old habits is easy if you keep your goals to yourself, because telling others about your goals helps you achieve them as friends and family often provide much needed support. There are other similar suggestions, one of them (Hays et al., 1985), which suggest that the greater the public declaration, the more motivated people are to achieve their goals.

Social networks, which are used by many, provide a platform to share information with friends and family and seems to be widely accepted. With the option of checking in (GPS and location based tagging), uploading images, tagging friends and more, the social media can to some extent be viewed as a way for people to validate their RLGs while having higher chance of success due to public declaration. With more than 901 million active users, Facebook is the largest social network service that exist (Protalinski, 2012) and with its leading position in the field of social media it is by many seen as the defacto standard of digital social networks. Furthermore, a study conducted by the Information Solutions Group (2010), shows that at 83%, Facebook is the primary social networking site social gamers go to when they want to play social games in the United States. Ines and Abdelkader (2011) moreover assume that the success of Facebook games is linked to the blending of personal and social aspects. Among other, they discuss Cova's tribes (Cova & Cova, 2002) and the power of foci in understanding networks (Feld, 1981). They suggest that in social games, groups of so called tribes are created and the focus in the tribe pushes the user to participate in the tribe's activities and having friends participating as well contributes to pushing the user to continue participating in the activity. Acting within the acceptance and influence by a tribe or group relates to what is commonly known as peer pressure and according to Falk and Ichino (2003) the effects of peer pressure raise the overall average productivity significantly and those who are less productive react more significantly to the effects than the high productive.

The idea proposed in this paper, namely using RLGs and assigning a value that can

be used within digital games, in combination with an integration of Facebook may thus - based on the above literature review - have potential to support the user in achieving those goals and act as a dynamic in setting their value. When a user sets a goal it could be shared with friends and family through Facebook as a post on a user's wall. And the 'likes' received in response to that post could affect the value of achievement, by adding to the initial base value assigned to the goal. Thus the behaviour that can be observed on social networks can appear as a way of documenting and validating one's actions by posting status updates, images, locations and friends associated with an activity. It is proposed that this user data can be used to document the validity of a completed RLG as it will typically exist within a group of friends where a certain element of trust can be expected. This way social networks such as Facebook has the value of motivating users to achieve and complete goals with the added possibility of documenting and evaluating reactions to a completed goal.

### **Case-Study: "WooHoo!"**

The WooHoo! system has been developed in order to explore the potential of using RLGs as a facilitator of progression in a digital game through an implementation designed to give additional value in a game by achieving RLGs. WooHoo! is a web application that consists of three applications, 'WooHoo! Goals', 'WooHoo! Play' and 'WooHoo! Profile', which make up the WooHoo! system (see figure 3 on page 12).

WooHoo! Goals allows the user to define RLGs, categorize them (as 'Health', 'Social', 'Creative', 'Lifestyle', 'Intellect' or 'Other') and add them to a list of goals (similar to a to-do list). When a goal is added to the list, it is also published on Facebook for friends and family to see and cheer the user on. WooHoo! Play, which is the digital game part of the system, is a simple game where the user can build an infinitely tall tower by collecting coins. Each coin collected adds to the building blocks of the tower and a single point to the user's score (see figure 4 on page 13). It is possible to play the game without the WooHoo!

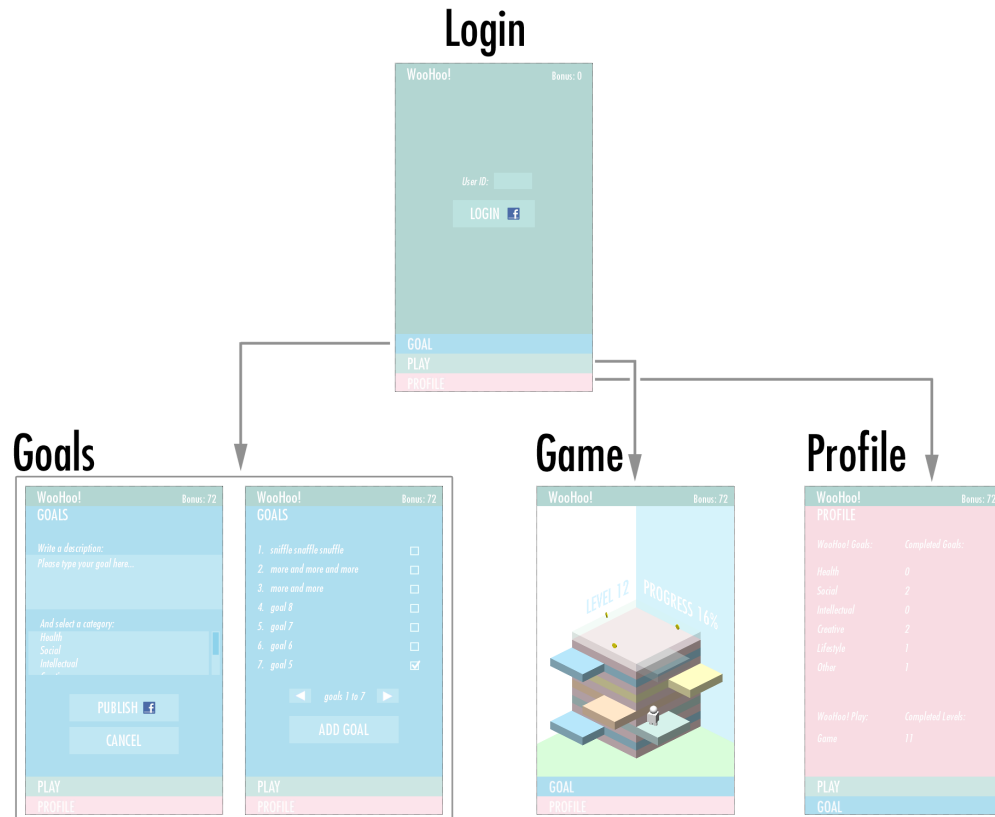


Figure 3. WooHoo! system overview

Goals part, but when a RLG has been completed and marked as accomplished, bonus coins are awarded to the user through this part of the system. These bonus coins can then be used to build the tower faster and add extra points to the user's score. Finally, WooHoo! Profile allows the user to see his/her progress in a simple profile.

### Test Method: Evaluating WooHoo! through Continuation Desire

In order to explore the possibilities with the WooHoo! system the focus was to assess how engaging the test participants perceived the implementation. Usually, when evaluating engagement related concepts such as presence, immersion and flow are assessed through post-experience questionnaires (e.g. (Brockmyer et al., 2009)). However, the experience of these concepts may be challenging to measure as they may vanish if interruptions, such as a questionnaire during the experience, occur or when there is a substantial time difference

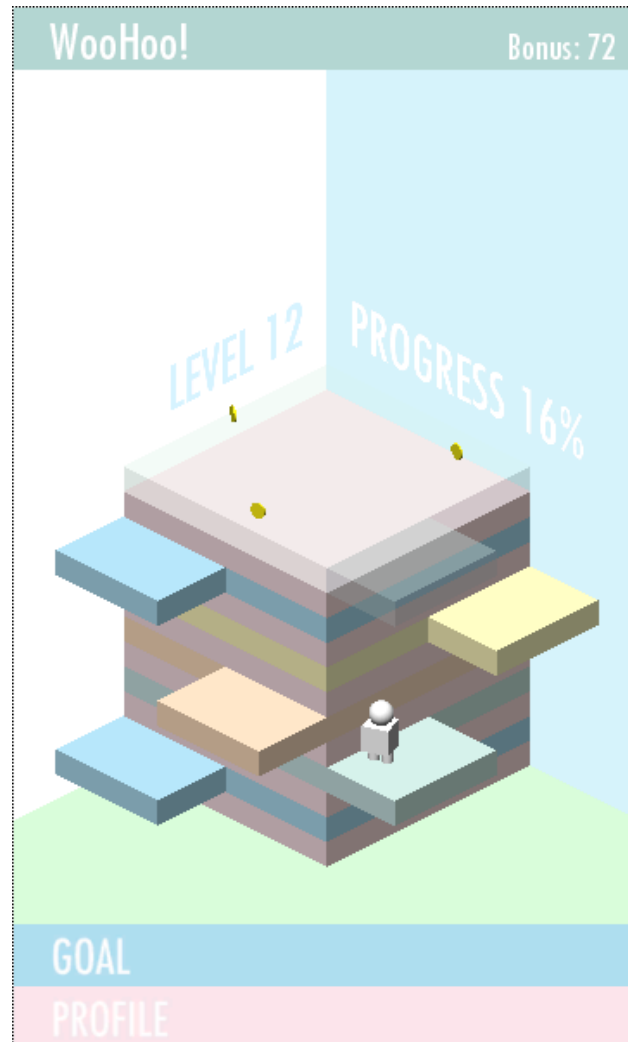


Figure 4. WooHoo! Play game play

between play-sessions. Furthermore, the WooHoo! system has game elements both in real life and in the digital game. Therefore, evaluating flow, presence and immersion makes little sense in this case. We thus argue that the benefit of evaluating the 'desire to continue' aspect of engagement, rather than these concepts, is that the aspiration to continue does not "break" when interrupting a game session to investigate the players desire to continue playing, as the player always will be able to reflect on questions concerned with how much he or she wants to continue playing.

In an attempt to identify the different processes of WooHoo! and how these processes contribute to the experience of the game, we based our case study evaluation on the

Engagement Sampling Questionnaire (ESQ), which is intended to assess the level of continuation desire before, during and after the game session and the related reasons for wanting to continue or not through a series of self-report questionnaires (Schoenau-Fog, 2011a).

### **Procedure and Participants**

Due to differences between WooHoo! and the interactive storytelling application being tested in (Schoenau-Fog, 2011a), the intrusive method (where the application that is being tested is paused so the test participants can answer a questionnaire during run time) was not used while testing WooHoo!. Instead the participants answered the online questionnaire once a day when they desired. The test spanned two to three days and was conducted in the test participants' own environment where they could access WooHoo! online.

In total eight test participants, six males and two females participated in the test. The respondents did not have any prior knowledge about the project and were recruited through convenience sampling. Four out of eight test participants participated for two days and four out of eight test participated for three days. The age ranged from 23 to 40 years with the average age being 30 years. The amount of time participants spent playing games per week ranged from 0 to 12 hours with the average for all test participants of 5 hours per week. Some responses were given by indicating an extent of agreement to a question on a 7-point Likert scale, ranging from "Strongly disagree" to "Strongly agree" to measure the continuation desire among the participants (e.g. "I want to continue playing WooHoo!") while other questions were encouraging qualitative feedback related to quantitatively rated answers. This approach allowed for users' reflections when rating their desire to continue while using the different parts of the system.

Before engaging in the experience of using WooHoo! all participants were presented with a video introducing the functionality of the system and how to use it. After being

presented with the video all participants would rate their motivation to begin the experience and reflect on what made them want to start. Based on the Engagement Sample Questionnaire (ESQ) (Schoenau-Fog, 2011a), the test consisted of three stages: a pre-test questionnaire before starting WooHoo!, a questionnaire each day during the test period and finally an evaluative questionnaire after the test. The pre-test questionnaire had two purposes; to obtain basic demographic information about the individual participant and to establish a baseline of the participants' motivation to begin using the system. The purpose of the daily and post-test questionnaires was to examine how and why the test participants' continuation desire was affected while using WooHoo!.

## **Findings**

Based on the limited number of test participants it was not possible to generalize the findings or to provide any statistically significant results, but only to evaluate qualitative answers and look for trends within these. When analyzing the qualitative feedback, responses that occurred consistently and addressed a specific detail of the system was categorised as a tendency when three or more participants addressed it.

The participants who were motivated to begin the experience expressed a common curiosity to see how their RLGs would connect with a game, and some expressed curiosity of how WooHoo! could benefit their life. This curiosity was expressed by six participants through statements of being either interested, excited or expressing a willingness to explore how WooHoo! works. Two participants who were reluctant or indifferent to begin the experience were mentioning boring gameplay and problems with cheating due to validity issues when setting and completing goals as reasons for hesitating to begin playing. This concern was furthermore expressed through statements of the game being completely dependent on other people's honesty and conscience when playing and comparing results.

Throughout the test period the reported continuation desire among test participants were either increasing, stable or decreasing. To evaluate the participants' experience with

WooHoo! the changes in a participant’s continuation desire were noted and feedback recorded at the point of change analysed. Three participants reported an increase in continuation desire during the test period and had different reasons for doing so. It was not possible to discover a common denominator for this change. However, when looking at the qualitative answers from the respondents, who rated their level of continuation desire as high, the main reasons for engaging in the WooHoo! experience was the feeling of progression (both in-game and completed RLGs), the ability to be able to track and keep an overview of RLGs, which gave the respondents and increased feeling of a commitment to, and a responsibility for, completing RLGs.

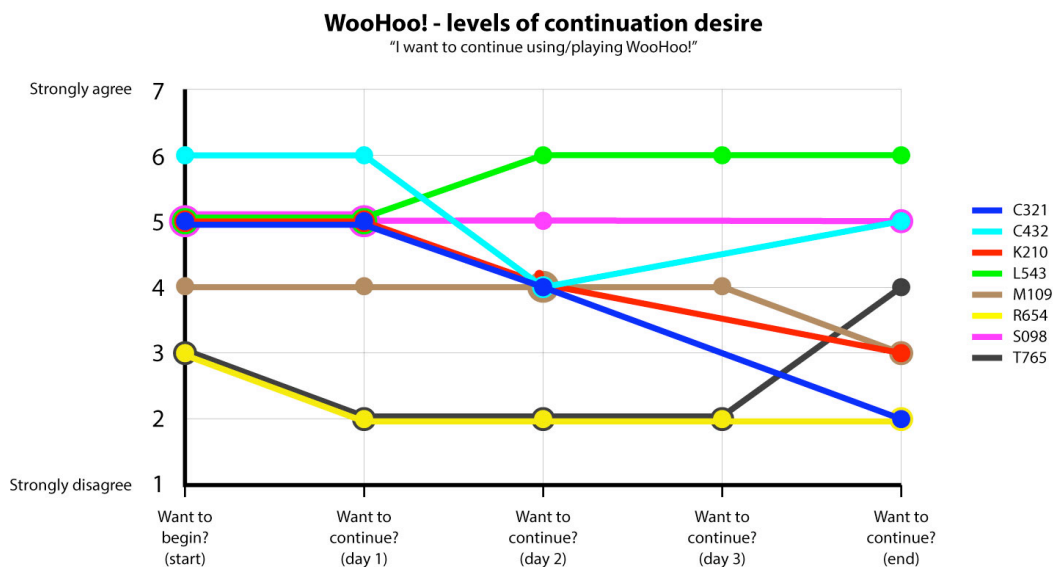


Figure 5. The test participants’ level of continuation desire in WooHoo! over the test period

In general, five out of eight participants had a lower desire to continue at the end of the test, than they did initially. There were a couple of factors that contributed to decreased continuation desire among respondents. One was reluctance to publish RLG to Facebook, where participants reported that they found their RLGs to be either private or tedious to be shared. Another factor revolves around the gameplay of WooHoo! Play, as



five out of eight participants disliked the gameplay, either for not delivering enough rewards and challenges while others thought it to be too boring, simple and trivial. Over time, participants changed their view on the gameplay from initially wanting to keep playing to becoming disengaged, due to the lack of novel game elements - a problem which is also as also described by Koster (Koster, 2005).

## Discussion

This paper has explored the interplay between RLGs and digital gaming through a user's desire to continue which ideally could inspire higher productivity and/or an increased feeling of joy related with completing and accomplishing RLGs. Gamification is proposed by many as the mechanics for making reality feel more like a game, but is a divisive term of which the actual effect is discussed. Despite the contradicting opinions on the benefits of gamification, the engaging power of playing well-designed digital games are not challenged by either part (McGonigal, 2011; Chorney, 2012).

This debate on gamification as the way to improve productivity connected with game mechanics has lead to an idea of reifying RLGs and use the value to facilitate progression and to gain benefits in existing games rather than in one specific game. Contemporary games already allow users to gain some of these benefits in games by using monetary purchases which by Zichermann (2010) is argued to denominate the users in-game experience to a certain monetary value and does not leverage their emotional investment in the game. Zichermann and Linder argues (Zichermann & Linder, 2010) that well-designed point systems in games can have a value much more extensive than the one expressed by money. Using World of Warcraft (WoW) as an example, games with well-designed virtual currencies will push the user to invest more time, attention and money. When an option of achieving RLGs is added to these kind of games as an inexpensive alternative available at all times, users would be given the option of increasing their productivity through RLGs and benefit with a virtual currency that would be of greater value to the user.

When proposing an alternative to monetary purchase in games, it is necessary to discuss how such a solution could benefit the companies and developers of these games. While RLGs are seen as a mere alternative to monetary purchase and not as a replacement, it does however insinuate a reduction on monetary purchases. Zichermann and Linder (2010) and Radoff (2011) describes games and gamification as means to leverage marketing and business models, thus benefitting the bottom line for businesses. For reification of RLGs to be relevant to the game makers, it must also provide contemplations on how businesses can benefit and monetize from such a system.

Reification of RLGs in games from a holistic perspective can be viewed as not only being productive and beneficial to the user, but also to the user's environment - including businesses as they are also part of peoples everyday. RLGs may encompass everything the user does in the real world, for example shopping, socialising with friends and work. Businesses provide services and solutions for completing certain real life goals. These specific services and solutions may be presented to users as 'Premium' RLGs much like user are presented with advertisement through the internet and shopping catalogues, and thereby inspire users to combine RLGs with certain purchases. This way games could gain advantage as more integrated advertising. As it has also been argued, reification of RLGs in games also suggest increased productivity and joy, which in an increasing global concern with economic growth could provide game makers with an incentive to market themselves and their games as being sustainable to environment and economy much like green technologies are now often considered advantageous to less environmentally friendly alternatives.

As an alternative to viewing reification in the context of businesses and creating profits, reification of RLGs can also be used in awareness of the environment and community including NGOs and government, where charitable work (Jianqiang et al., 2011), non-profit tasks and learning at educational institutions could be motivated by games, with the same overall goal of increasing productivity and joy by accomplishing

RLGs.

That idea is however not without its challenges, especially verifying the completion of a RLG and deciding its value and the risk of cheating are among those challenges. A RLG can be anything the user sets out to do, therefore verifying the completion of that RLG becomes a challenge. The reification concept is not focused on only one category of RLGs, where a specific method can be used to verify a RLG (e.g. sports, where tracking movement across distance using GPS could be used as a verification) but instead it is focused on diverse categories of RLGs, where more than one method would have to be used to verify a RLG. Evaluating a RLG becomes a challenge for a couple of reasons. One reason is that a RLG can have different levels of difficulty depending on the person, thereby making a certain reward for that RLG large for one user but smaller for another user. Another reason is that the game can be any game the user wishes to play, requiring a versatile reward system adaptable to any game. The case study of WooHoo! showed indications of concerns held by users for a such system to be successful and makes it clear that the approach would need further development and testing in order to determine if a such system is acceptable to the users and can be integrated in other games.

### **Conclusions and Future Work**

The evaluation of the concept of reifying real life goals in games leaves extensive research to be conducted for conclusive results. However, this study has given certain indications of crucial areas of concerns raised by participants. The study of gamification as a problem specific approach raises several challenges in terms of sustainability and profit focus, whereas a holistic approach towards how people apply social media in their everyday lives and how games are already serving as a recreational and engaging activity can be merged in a system that benefits both the productivity of the user, but also enriches games that employ user accomplishments in real life. As opposed to gamification this introduces a notion of all real life goals having a potential value, which can be seen as beneficial not

only in businesses but also as a productivity gain in voluntary and altruistic contexts.

Nevertheless, due to the declining level of the desire to continue among the majority of participants in this study, the findings suggest that the current case study does not indicate a potential for a system that allows users to set up and describe real life goals in order to keep track of these objectives and allow users to gain additional benefits in a game when accomplishing these real life goals. However, the responses indicate that the major reason for disengagement was the simple game play in the implemented test game. If the evaluation had been carried out with a more engaging game the exploration might have showed different results. The evaluation furthermore suggests that it is crucial that the additional benefit of the user experiences is relevant to the individual user and requires a system that can adapt real life goals to games sufficiently accurate to accommodate the user's expectations.

Exploring the users' engagement through the willingness and desire to continue using the system has proven to be a helpful tool to evaluate the validity of individual mechanics. The exploration has identified some trends, which demonstrates crucial information of critical areas that must be addressed. The future research and development of WooHoo! will thus be investigating more extensive use of real life goal validation tools such as improved categorisation, multimedia sharing, check-ins (GPS and location technology), friend association and self-defined difficulty levels. Furthermore integrating with, and utilizing, a variety of (existing and more engaging) games rather than one specific game, in order for users of a such system to choose a game that engages the individual user.

In conclusion we believe that there is basis for rethinking how gamification is applied, and that reification, as described in this paper, could be a solution to motivate user productivity through the use of existing games. One might have some objectives to accomplish in everyday life but sometimes also have a desire to escape from reality into the world of games. Currently playing a game and achieving real life goals are two separate activities, but there is no reason why that needs to continue to be the case. We thus

believe it is beneficial to look into the concept of using real life goals as a facilitator of progression in digital games, where one may be able to advance in a digital game while one can become more motivated to achieve goals in real life and thereby incorporating meaningful play in the intersection between life and digital games.

### **Acknowledgements**

This paper is based on a 6th semester student project at the Medialogy education at the Department of Architecture, Design and Media Technology, Aalborg University Copenhagen. Participation at the Meaningful Play Conference 2012 has been funded through helpful support from the Department of Architecture, Design and Media Technology, Aalborg University Copenhagen, as well as the Study Board for Media Technology at Aalborg University.

## References

- Academy, K. (n.d.). *Khan academy*. Retrieved from <http://www.khanacademy.org/>. (Accessed: 18.07.2012)
- Brockmyer, J. H., Fox, C. M., Curtiss, K. A., McBroom, E., Burkhart, K. M., & Pidruzny, J. N. (2009, 07). The development of the game engagement questionnaire: A measure of engagement in video game-playing. *Journal of Experimental Social Psychology*, 45(4), 624 - 634.
- Chorney, A. I. (2012). Taking the game out of gamification. *Dalhousie Journal of Interdisciplinary Management*, 8(1).
- Cova, B., & Cova, V. (2002). Tribal marketing: The tribalism of society and its impact on the conduct of marketing. *European Journal of Marketing*, 36(5/6), 595 - 620.
- Deterding, S., Khaled, R., Dixon, D., & Nacke, L. E. (2011, 05). Gamification: Toward a definition. In *Chi 2011*.
- Endomondo. (n.d.). *Endomondo: Community based on free gps tracking of sports*. Retrieved from <http://www.endomondo.com/>. (Accessed: 18.07.2012)
- Falk, A., & Ichino, A. (2003, 03). Clean evidence on peer pressure. *IZA Discussion Paper*(732).
- Feld, S. L. (1981). The focused organization of social ties. *The American Journal of Sociology*, 85(5), 1015 - 1035.
- Foursquare. (n.d.). *foursquare*. Retrieved from <https://foursquare.com/>. (Accessed: 18.07.2012)
- Hays, S. C., Rosenfarb, I., Wulfert, E., Munt, E. D., Korn, Z., & Zettle, R. D. (1985). Self-reinforcement effects: An artifact of social standard setting? *Journal of Applied Behavior Analysis*.
- Ines, D. L., & Abdelkader, G. (2011). Facebook games: Between social and personal aspects. *International Journal of Computer Information Systems and Industrial*

- Management Applications*, 3(ISSN 2150-7988), 713 - 723.
- ISG (Information Solutions Group). (2010). *2010 social gaming research*. Retrieved from [http://www.infosolutionsgroup.com/2010\\_PopCap\\_Social\\_Gaming\\_Research\\_Results.pdf](http://www.infosolutionsgroup.com/2010_PopCap_Social_Gaming_Research_Results.pdf). (Accessed: 17.07.2012)
- Jianqiang, D. S., Ma, X., Zhao, S., Khoo, J. T., Bay, S. L., & Jiang, Z. (2011). Farmer's tale: A facebook game to promote volunteerism. In *Chi 2011: Proceedings of the 2011 annual conference on human factors in computing systems* (p. 581 - 584).
- Koster, R. (2005). *A theory of fun for game design*. Paraglyph Press.
- McGonigal, J. (2011). *Reality is broken*. Jonathan Cape.
- Nike, I. (n.d.). *Nike+*. Retrieved from <http://nikeplus.com/>. (Accessed: 18.07.2012)
- Protalinski, E. (2012, 04). *Facebook has over 901 million users, over 488 million mobile users*. Retrieved from <http://www.zdnet.com/blog/facebook/facebook-has-over-901-million-users-over-488-million-mobile-users/12105>. (Accessed: 17.07.2012)
- Radoff, J. (2011). *Game on: Energize your business with social media games*. John Wiley & Sons.
- Rexbox, & SuperMono. (n.d.). *Epic win - level-up your life*. Retrieved from <http://www.rexbox.co.uk/epicwin/>. (Accessed: 18.07.2012)
- Schell, J. (2010, 02). *When games invade real life*. Retrieved from [http://www.ted.com/talks/jesse\\_schell\\_when\\_games\\_invade\\_real\\_life.html](http://www.ted.com/talks/jesse_schell_when_games_invade_real_life.html). (Accessed: 16.07.2012)
- Schoenau-Fog, H. (2011a, 12). Hooked! - evaluating engagement as continuation desire in interactive narratives. *Lecture Notes in Computer Science*, 219 - 230.
- Schoenau-Fog, H. (2011b, 09). The player engagement process - an exploration of continuation desire in digital games. In *Proceedings of digra 2011 conference: Think design play : Fifth international conference of the digital games research association*

(2011). Digital Games Research Association.

Wiseman, R. (2010). *59 seconds: Think a little, change a lot*. Pan Books.

Zichermann, G., & Linder, J. (2010). *Game-based marketing: Inspire customer loyalty through rewards, challenges, and contests*. John Wiley & Sons.