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Conference Paper · June 2021

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Preconceptions towards gamifying work

A thematic analysis of responses of a maritime logistics organization

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ABSTRACT

While research is increasingly investigating gamification in occupational environments, little in-depth analyses focus on understanding employees' perceptions of gamified work. To address this gap, this paper presents a thematic analysis drawing on ten interviews among maritime port employees to elaborate on their preconceptions towards work gamification. By offering contextualized insights, our results detail how competition-based gamification, as well as those highlighting individual performance, are perceived as detrimental for the collaborative pursuit of work, while raising concerns related to organizational outcomes, such as safety and work quality. Moreover, employees believed there is a boundary between work and play which could be difficult to breach, while inherent qualities were perceived as the main motivational characteristics of work. Our results highlight how gamification at a workplace should not contradict or undermine organizational values, especially teamwork, but conform to them in order to enhance occupational well-being and fluency. Moreover, gamification should enhance intrinsically motivating aspects of work instead of entirely altering how the work is perceived.

CCS CONCEPTS

• **Human-centered computing;**

KEYWORDS

Gamification, work, logistics, motivation, preconceptions

ACM Reference Format:

Eetu Wallius*, Ana, C.T., Klock, Vilhelmiina Eronen, and Juho Hamari. 2021. Preconceptions towards gamifying work: A thematic analysis of responses of a maritime logistics organization. In *Academic Mindtrek 2021 (Mindtrek '21)*, June 01–03, 2021, Tampere/Virtual, Finland. ACM, New York, NY, USA, 6 pages. <https://doi.org/10.1145/3464327.3464368>

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Mindtrek '21, June 01–03, 2021, Tampere/Virtual, Finland

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ACM ISBN 978-1-4503-8514-5/21/06...\$15.00
<https://doi.org/10.1145/3464327.3464368>

1 INTRODUCTION

Managers and researchers have become increasingly interested in understanding how organizations can benefit from gamifying their occupational environments. Commonly referred to as the transformation of environments traditionally not perceived as games, gamification aims to provide similar benefits while promoting behaviour change towards, for example, productivity, creativity, and sustainability [9, 11, 14]. Gamification affords gameful experiences through various resources: avatars, narrative or role-play could generate a feeling of immersion, whereas badges and leaderboards might offer a sense of progression and achievement [14].

In work-floor operations, these gameful experiences have been mainly harnessed to improve efficiency as well as outcomes related to employee compliance and competence [25]. For instance, gamifying work tasks can increase motivation and thereby enhance effectiveness by providing suitable feedback (e.g., points, progress visualization) that allows employees to monitor their performance and compare it with their colleagues' or company standards [6]. Gamification at the workplace is also applicable to the onboarding and training processes due to its capability to create engaging experiences that lead to improved learning [10, 17]. Moreover, as some work-floor operations are characterized by monotonous and repetitive tasks, gamification is a promising tool for improving employee engagement [13]. An example from the production domain is the solution proposed by Korn [16], which reframed repetitive assembly tasks to resemble the classic game of Tetris to increase work motivation.

Despite its potential benefits, the effects of gamification in occupational environments are not comprehensively understood. The nascent body of research on work gamification lacks studies seeking to understand employees' attitudes and insights related to gamifying their practices and tasks [25]. Whereas experimental and other quantitative studies provide some evidence regarding short-term effects of gamification on outcomes that benefit companies (e.g., efficiency, productivity or engagement [5, 15]), they can not broadly capture employee perceptions related to work gamification, or the emergent organizational effects gamification might induce. This shortcoming hinders scholars and practitioners from considering the complexities of work gamification which has, thus far, been mainly regarded as an instrumental, technology-driven tool for enhancing efficiency [25]. At worst, gamification hinders occupational well-being and intrinsic need satisfaction, especially if associated with social pressure or punishment avoidance [12, 19]. Consequently, the most vocal critics of gamification have labelled

it as exploitation due to the idea of it replacing material incentives with fictional ones, and not benefiting the employees [1, 20]. Further in-depth qualitative research is thus needed to understand employee attitudes and insights towards gamification to avoid the risks on well-being and understand the diverse emergent effects gamification can have in an organizational context.

To contribute to the current corpus of gamified labour, this paper aims to understand what are the motivational characteristics of work-floor operations (RQ1) and how do work-floor employees preconceive gamifying their organization, practices, and systems (RQ2). We seek to answer these research questions by presenting the results of a thematic analysis drawing on ten in-depth interviews with maritime port employees working in a company with no ongoing gamification design. Section 2 describes the methodology, including data collection through interviews and reflexive thematic analysis of the data, section 3 describes the results, and section 4 provides a discussion of these results. Section 5 presents the limitations of our study, while conclusions are presented in section 6.

2 MATERIALS AND METHODS

2.1 Participants

Ten employees working in a maritime port in Western Finland were interviewed in April–June of 2020. We contacted the company in which the interviewees work, and company representatives conducted the recruitment of individual participants. Maritime port workers were chosen for this study due to the central role port operations play in the global economy [7], and due to the various job descriptions it includes - ranging from planning and management tasks to the prototypical blue-collar work of cargo handling [18].

All interviewees were representatives of a single port operator company, which provides services such as cargo handling, warehousing, freight forwarding and shipping. The interviewees formed a heterogeneous group in terms of age, education level, and job description. Four interviewees identified themselves as female, and six as male. Their ages ranged between 33 and 57 years old, and they had been working at the port between 6 and 33 years, having on average 19 years of maritime logistics work experience. Three interviewees had a higher education degree.

2.2 Data collection

A semi-structured interview method was used, and each participant was interviewed individually by a single researcher. The interviews were conducted by telephone due to the COVID-19 pandemic and related travel and visit restrictions. Prior to beginning the interviews, the participants' voluntariness and anonymity were stated, and the interviewer provided a brief definition of gamification (i.e., the use of game features and functions in contexts outside of games [9]) as well as information about the purpose of the interview. Besides understanding employee attitudes, the interviews aimed to elicit requirements for future gamification design. Therefore, the interviews covered a broad set of topics, such as the gaming habits, work motivations, technology usage at work and leisure settings, perceptions and attitudes towards different types of motivational affordances (e.g., competition, cooperation, role-play, lotteries and performance visualization) and corporate training experiences.

The semi-structured interview method was chosen as it is useful in collecting information about the values, ideologies, and norms of an organization's members [23]. Although a loose interview guide was developed and iteratively revised between interview sessions, the discussions were given an opportunity to proceed in various ways, depending on the flow of the conversation. Nine interviews were recorded, lasting between 33 and 60 minutes, and transcribed into Finnish. Due to the interviewee's request, one interview was not recorded, and the interviewer made written notes during the interview instead.

2.3 Data analysis

Following the guidelines of Braun & Clarke, we conducted a reflexive thematic analysis of the transcribed data [4]. The analysis was an iterative process that comprises: i) reading the interview transcriptions and generating codes by labelling meaningful data extracts; ii) creating themes (i.e., meaningful patterns within the data) based on the generated codes; and iii) reviewing the themes, codes, and the coded data extracts included in these themes.

The reflexive thematic analysis emphasizes the role of the researcher and their perspectives, and therefore the use of a research team is not desirable [3]. Accordingly, the coding phase (i) was conducted by one researcher based on what he perceived to be relevant regarding the defined research questions. Besides the predetermined research questions, no existing theoretical framework was used to guide the coding phase (i.e., data-driven approach [4]). The coding took place on both semantic (i.e., surface) and latent (i.e., underlying ideas and assumptions) levels.

After coding, the initial themes were created by grouping together interrelated codes (ii). First, codes containing similar ideas were arranged into groups, such as "Lack of tangible work goals" or "Non-motivating top-down efforts", which were then collated to form themes that aim to capture wider patterns within the data. The constructed themes are not primarily based on quantifiable measures, such as frequent occurrence across the dataset, but rather aim to capture aspects relevant to the current study and its objectives [4]. After having constructed themes, the transcripts were read again, and further coding was conducted to capture additional relevant data that would fit these themes. Steps (i) and (ii) were thus repeated iteratively to further identify and code relevant data extracts in the transcriptions, and to check whether the themes work in relation to the coded extracts (iii). Finally, the themes are described through an analytic narrative provided below, with relevant extracts translated from Finnish to English.

3 RESULTS

To answer the predetermined research questions, four interconnected themes were constructed based on the interview data: 1. *Inherent work qualities as main motivators*, 2. *Tall poppy syndrome*, 3. *Detrimental competition* and 4. *Work as a serious pursuit*. These themes contribute to the current body of research on work gamification by first describing the motivational characteristics of work and then disclosing employee attitudes towards gamifying work tasks, systems and their occupational environment in general. Moreover, these themes elaborate on how gamification, organizational culture and work tasks cohere.

While the interviewees did not oppose the idea of gamifying their work tasks, several patterned concerns and conflicts were identified based on their responses. The first theme was formed based on the notion of the interviewees describing how they perceived work to be intrinsically motivating. While some managerial attempts to increase work motivation were mentioned throughout the interviews, many of them were considered mostly futile. Some of the most prominent aspects of the intrinsically motivating work qualities were collaboration and teamwork, which predominated the organizational practices and culture. Based on this notion, theme two was formed to describe how affordances such as titles or trophies, that highlight individual performance, were considered unsuitable, whereas theme three elaborates on some of the conflicts that may arise from implementing competition. Finally, theme four colours on the identity conflict that may occur when work is being gamified.

3.1 Theme 1. Inherent work qualities as main motivators

Besides salary, the interviewees predominantly described their work motivation arising from the inherent qualities of the tasks, the working environment and employment arrangements. In particular, being able to plan and conduct the daily tasks freely and being able to solve problems, such as loading cargo to a ship space efficiently, were often mentioned as some of the most motivating aspects of working at the port. Moreover, most interviewees regarded stevedoring as highly collaborative work, noting that working with others and helping colleagues are important sources of motivation and work satisfaction. As an example, one interviewee described the most rewarding aspects of work as follows:

“In work-related problem solving, the reward is very meaningful when (...) just the good feeling that you get when you are able to solve a problem and learn something new at the same time (...) and you also know that you help someone else’s work.” (Interviewee 6)

Due to the absence of metrics related to individual working efficiency, most interviewees stated that they have no tangible or quantifiable work-related goals and, besides salary, did not describe motivational aspects in addition to the inherent qualities of work previously mentioned. Nevertheless, some efforts for increasing work motivation had been implemented at the port. For example, meal tickets had been handed out for the groups that performed well. Instead of simply providing incentives, some of these practices had rather gameful qualities: lotteries had been organized for those reporting safety issues encountered at the port, and honorary mentions of good performance were printed on a weekly leaflet distributed among employees. However, many interviewees regarded these “gamified” motivational efforts as meaningless - or at least outweighed by the intrinsic qualities of work - as exemplified by the following extracts:

“I have done them (safety reports) when needed, if I have seen something. Not for the sake of being eligible to take part in a lottery.” (Interviewee 5)

“If they write ‘well done’ on some weekly leaflet, it does not mean anything to us.” (Interviewee 9)

Interestingly, some interviewees even regarded feedback from managers as unnecessary due to their work’s autonomous nature:

“I really don’t care what others think as long as I am happy with it (performance at work). (...) Our employer does not see how we work during the day. It is a big place and a vast area, they are not there. (...) we don’t need any personal feedback, or at least I don’t.” (Interviewee 9).

At any rate, many interviewees expressed that meaningful feedback, given directly, immediately and sincerely, is motivating. Positive feedback, however, was seen to lose its meaning if not provided for a valid reason - “*when you have done something well*” (Interviewee 10). Similarly, tangible rewards, such as meal tickets, were regarded as meaningless by some of the interviewees if given out too generously.

3.2 Theme 2. Tall poppy syndrome

Besides being given directly and only for a valid reason, personal feedback was generally preferred over public acknowledgement, which was mostly perceived as embarrassing and unsuitable for the working environment. This was due to the perceived juxtaposition between public praise and the nature of stevedoring work, which relies on tight and seamless cooperation of individuals, as well as the ensuing organizational culture where “*those that fly solo are quickly put back into the line*” (Interviewee 9). In addition to being unsuitable for the organization, public recognition was perceived as something unfamiliar to the entire surrounding culture as “*Finns become embarrassed when publicly praised*” (Interviewee 1). In many interviews, the perception of ill-suited public recognition extended additionally to various emblems of success, such as titles and trophies:

“If we talk about some placards on the wall where your name is written (...) this is a kind of a harsh community and there will be mockery. There will be mockery for a long time.” (Interviewee 4)

Some interviewees, however, perceived public recognition as potentially motivating and satisfying. Nevertheless, even in such cases, it was associated with bragging, “*blowing one’s own horn*” (Interviewee 6), as well as being seen to pose a risk of generating envy among colleagues.

3.3 Theme 3. Detrimental competition

The organizational culture formed by the necessity to work collaboratively in tight-knit groups also affected how the interviewees perceived the suitability of competition-based affordances in their working context. Whereas cooperative gamification was generally considered a good idea as it reflects the natural way of working at the port, most interviewees perceived competition as a risky affordance. This was due to its potential to afflict the status quo consisting of necessary routines built upon a highly collaborative way of working.

Although competition was seen as a part of working life - “*we all compete for our own living space at the workplace*” (Interviewee 1) - and there existed a subtle contest between different work groups on who could load most tonnes per shift to ships, it was mostly deemed harmful for various reasons. Firstly, competition was mostly associated with quantitative performance, and work at the port is composed of complex and varying tasks, which cannot be adequately measured using quantified metrics, thus providing an unfair basis for competition:

“Certain clients require more preparation (...) it might take 10-20 minutes to prepare a container whereas another might take only a few minutes.” (Interviewee 5)

Secondly, competition was perceived as a source of stress and deteriorating to work performance by some interviewees:

“A person that is not competitive can’t complete the same amount of work in a competitive situation as they normally would.” (Interviewee 8)

Besides individual work performance, competition was seen to pose a risk to the organizational culture as it increases the divide among individuals as well as work groups:

“It puts people into categories.” (Interviewee 8)

“Maybe if one group does (...) plenty more than the other four, then surely the other four are frowned upon.” (Interviewee 4)

Well-being, work performance and organizational culture were not the only aspects that were seen as potentially deteriorated by competition. The interviewees expressed that competition in the working environment can pose additional physical risks, thus affecting the quality and safety of their work. As the interviewees predominantly associated competition with quantitative performance, the concerns of safety and quality were mainly related to increasing working pace and the number of errors that follow:

“I think that competition is bad in a working environment, as when you increase speed, there will be more accidents. It is not safe there in my opinion.” (interviewee 10)

Competition, however, was in some cases perceived differently regarding aspects of work besides the main tasks of loading and unloading cargo ships, and related planning and management. For example, competition applied to corporate safety training was regarded as motivating and non-harmful by some interviewees:

“In those kinds of safety things, why not, as it is only about who has the best skills, wins. It is just fine. Maybe it encourages you to learn more.” (Interviewee 6)

Some interviewees nevertheless expressed concerns that competition applied to corporate training, for example, might eventually extend to other aspects of their work, thus causing some deteriorating effects described above.

3.4 Theme 4. Work as a serious pursuit

Although the interviewees did not generally oppose the idea of gamifying their practices, many of them expressed a sentiment of

how work is something to be kept separate from play. The perception of how these two should not be mixed was most evident when the interviewees discussed how immersive affordances, such as role-play and avatars, would fit the working context. Although some interviewees were slightly amused, and even curious by the idea of utilizing role-play at work, it was mostly deemed unsuitable for the working environment as well as the “*conservative*” and “*stuck-in-their-ways community*” (Interviewee 8).

Instead of raising concerns related to organizational outcomes and processes, such as safety or teamwork, affordances related to role-playing and avatars were considered unfamiliar and aversive - a mismatch with the professional identities of those working at the port:

“Many of the harsh stevedores will not probably start building themselves an avatar.” (Interviewee 6).

“Such avatars don’t belong to professional life, I am a conservative person in that sense.” (Interviewee 2)

However, the perception of work and play as something to be kept separate extended beyond role-playing affordances. As an example, also competition was deemed “*childish*” (Interviewee 9) and something suitable for sports and leisure, but not work:

“When I go competing (at sports) and put the number tag on my chest, I can take things to the next level (...) but not everybody can do it and I don’t think it can be demanded at work.” (Interviewee 8)

Moreover, when discussing the possible risks arising from applying additional motivational affordances to their organization and work tasks, many of the interviewees suspected that it would be met with some resistance due to the perception of work and “*fun and play*” being something to be kept apart. As an example, the employees expressed how “*some are here just to work, so they won’t bother playing anything*” (Interviewee 5) and how there might be a risk of “*the boundary between work and leisure disappearing*” (Interviewee 8). Additionally, one of the interviewees expressed that in order to successfully implement gamification in their organization, “*it is quite important that is not taken as a joke*” (Interviewee 3) further emphasizing the perception of work as something to be taken seriously.

This idea of work as a serious pursuit, which, in some cases contradicts the perception of gamifying it, was assumed to be stronger among the older generation of workers by the interviewees. Besides the generation gap, gaming habits were brought up by some interviewees as something that might influence the acceptance of gamification. Overall, it was suspected to motivate especially those that generally enjoy playing games and the generation of workers “*born with a phone in their hand*” (Interviewee 2). In contrast, the older generation of stevedores might be foreign to the idea of using gameful systems and more hesitant towards attempts to gamify work tasks.

4 DISCUSSION

By focusing on maritime port logistics as a case study, this study examines the motivational characteristics of work-floor operations and contributes to the current corpus of gamified labour by providing an understanding of the employees’ preconceptions and

attitudes towards gameful motivational affordances in their working context, which is an avenue that has not been explored in-depth by previous research [25]. Besides employee perceptions, gamification research so far has largely failed to detect emerging outcomes that extend beyond dependent variables in a given study [14]. Thus, our in-depth qualitative study sheds light on the emergent effects that might occur when gamification is implemented in business organizations by disclosing employee concerns related to such organizational change.

As the first theme describes, the inherent qualities of work tasks and the working environment were perceived as the main source of motivation by the interviewees. At the same time, motivational characteristics based on rewards or punishment (i.e., external regulation [24]) were rarely brought up. The mentioned sources of work motivation and satisfaction were often related to social aspects, such as cooperation and helping colleagues, whereas the interviewees did not have tangible work-related goals due to the complex nature of maritime port work which is difficult to quantify. In addition to the social aspects, often mentioned sources of motivation included problem-solving and being able to plan and conduct one's own work freely. Thus, the motivational characteristics of maritime port work seem to cover the needs of relatedness, autonomy and competence [8] (RQ1). These results differ from a study conducted by Putz et al. [21] among order pickers, as in their study the extrinsic motivators outweighed the intrinsically motivating aspects of logistics work. This can be partially explained by the notion that the study by Putz et al. [21] was conducted among warehouse order pickers, whose work description differs from stevedoring. Whereas order picking at a warehouse is highly monotonous work comprising repetitive sequences characterized by time pressure, the interviewees in our study described variability - *"no day being like another"* (Interviewee 1) as an important motivational aspect of their work. Moreover, stevedoring and order-picking likely attract people with different motivations and characteristics, which, in turn, might give birth to differing traditions within organizations. Therefore, the differences in job descriptions, responsibilities as well as worker characteristics and traditions within the organizations possibly explain the differing results.

The interviewees of our study considered gamification as potentially motivating and engaging, while describing various potential concerns related to gamifying their work (RQ2). Although the interviewees described practices (e.g., competition between different work groups) which imply that their organization has evolved to have playful aspects [26], several potential pitfalls related to implementing additional gamefulness through interventions emerged throughout the interviews. Whereas cooperative gamification was deemed suitable, other motivational affordances like competition and those highlighting individual achievement were perceived risky to the organizational culture, and even physical safety, as Themes 2 and 3 highlight. This is mostly due to teamwork being a core cultural element within the case organization as the work tasks predominantly require a collaborative effort. On the other hand, affordances related to role-playing and avatars were mainly considered non-harmful but instead viewed as unfamiliar and aversive - a mismatch with the organizational identity [22]. As Theme 4 reveals, the perception of stevedoring as a "harsh" working culture conflicts with the idea of converting their work into something playful. This

resonates with prior studies that associate the "longshoreman identity" with "physicality", "masculinity" and even "machismo" shaped by the dangerous nature of stevedoring [18]. Therefore, in the light of our results, the prediction of Warmelink et al. [25] of gamification becoming a highly contested organizational change due to its potential to reshape professional as well as organizational identities seems to hold true. However, this is not only due to the identity conflict, as the mixing of play and work also raised concerns related to organizational culture, processes and outcomes.

Our results highlight the importance of not just understanding user motivations but also organizational values when gamifying work tasks. Overall, our results suggest that cooperative affordances should be favoured over competitive ones, while affordances highlighting individual achievement, such as titles and trophies should be implemented with caution when applied to primary work tasks. However, competition, titles and trophies can be suitable when applied to secondary tasks, such as corporate training. Moreover, gamification should not aim to entirely transform how employees perceive their tasks, as work is considered inherently motivating, and the "mixing of work and play" was considered an aversive idea. Instead, gamification should aim to enhance the inherently motivating aspects of work, such as problem-solving and autonomy.

5 LIMITATIONS AND FUTURE WORK

This study is based on the preconceptions of gamification among the interviewed maritime port employees. However, the experiences of actual implemented gamification likely differ from preconceptions. Like any organizational change, the idea of implementing gamification might be initially met with resistance, whereas the attitudes change over time when the changes take place [2]. Moreover, this study was conducted among one port operator company, and interviewees with similar cultural background, which influences the generalizability of the results. Thus, our findings should not be considered guidelines for gamifying maritime port work as such. However, the interviewees in our study have extensive experience in maritime port work and therefore we believe our results offer important insights on the issues to consider in order to successfully implement gamification in this particular domain. Another limitation relates to the data analysis. Although using a team of researchers when conducting a reflective thematic analysis is not required [3], having only one researcher conduct the analysis can lead to confirmation bias, and the constructed themes differ depending on the analyst. Additionally, the data extracts chosen to represent the constructed themes were translated from Finnish to English which might have led to translation inaccuracies, and nuances of the responses being lost in the translation process.

As this study is based on preconceptions towards gamification, further in-depth qualitative research is needed to elicit employee experiences and attitudes in work organizations that have gamified their practices and tasks and compare how the actual experiences differ from the preconceptions presented in this study. Moreover, future research should explore employee attitudes towards gamification in contexts and tasks outside of maritime port logistics as differing job descriptions, organizational cultures and traditions as well as employee demographics are likely to reveal complementary and differing insights related to work gamification.

6 CONCLUSIONS

This study explored motivational characteristics of work and employee attitudes towards gamifying their organization, practices and systems by focusing on maritime port logistics work as a case study. The results indicate that the intrinsic qualities of work were perceived as the main motivators, especially social aspects, problem solving and freedom to conduct tasks at one's own discretion. Whereas the general idea of gamifying occupational practices was not opposed, the interviewees expressed various concerns related to work gamification. The idea of work as a highly collaborative pursuit contradicted the ideas of implementing competition-based affordances or affordances that highlight achievements of individuals while raising concerns related to organizational processes and outcomes such as teamwork and safety. Moreover, the interviewees expressed a sentiment of how work is something to be taken seriously, contradicting the idea of making it "playful". Our findings suggest that researchers and practitioners should take organizational values, especially teamwork, into account and aim to conform to them when designing and implementing work gamification. Whereas competition, titles and trophies might not be suitable when applied to primary tasks, they can support secondary task engagement, such as corporate training. Moreover, as work is considered inherently motivating, gamification should not aim to profoundly alter how work tasks are perceived but enhance such intrinsically motivating aspects.

ACKNOWLEDGMENTS

This work was supported by European Union Regional Development Fund and conducted as a part of the Satadilogis project (A74723) and by Academy of Finland Flagship Programme [337653 - Forest-Human-Machine Interplay (UNITE)].

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