Life in Finland - Gamifying Integration Material Through an Interactive Novel

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Abstract: This paper presents a work in progress study about effectiveness of interactive gamified material about cultural differences versus passive media. Usually this kind of material is distributed in a form of official documents and videos. Usage of humor has spread to these, and comics depicting the humorous differences have also emerged in official and non-official cases. Work presented in this paper adds interactivity and other gameful design elements to the mix. As the study is work in progress, results at this point include the description of the prototype and some identified design decisions and elements that could be used when creating this kind of material.

Keywords: Gamification, gameful design, game design patterns, interactive novel

1. Instruction

Individual countries, even when they share borders and history, have their own cultural habits that might be difficult for 'outsiders' to see and understand. In Finland, the Ministry of Economic Affairs and Employment (2017) as well as Finnish immigration services (2017) have both released material that is aimed for teaching Finnish cultural differences to different groups that are moving to Finland.

These guides are rich of information, but also - for that particular reason - quite heavy to read and learn. Our multinational group thought that a gamified version of these guides would benefit not only immigrants and refugees, but also tourists and other group visiting Finland. The aim of our study is to research if our gamified content, in the form of interactive novel, would help non-Finnish people to understand Finnish culture and customs that Finns have.

As our group started work in an ad-hoc manner, our design process doesn't contain the stages and features associated with mature gamification process presented in Morschheuser et al. (2017). This is (sadly) in line with the current state of gamification research stated by Nacke and Deterding (2017) on the editorial titled "*The maturing of gamification research*" at the journal of Computers in Human Behavior. On the editorial they note how research rigor is still lacking on mainstream gamification research, but also note how the use of other means beside points, badged and leaderboards is getting more attention.

On practical level, the basis of our design and implementation were heavily influenced and guided by previous research on gamification and game design patterns. This can be seen as an effort to include features from the third and fourth level on Game-design meta-model by Lindley and Sennersten (2007), which are the 'Game taxonomies and ontologies' and 'Theoretically motivated design'. But, as stated earlier, our work started in ad-hoc manner, and much of the knowledge is also based on our own cumulative experience and what we have learned from our peers, meaning that the backbone of the design process is still on the lowest level, Implicit design, on the meta-model.

In our work, gamification is the application of 'game design elements in non-game context' (Deterding et al. 2011), for the purpose of engaging users with a chosen service or products. Gamification has already been used in various studies and modern products to study and leverage its effect on the human behavior, especially in the areas of education and marketing. In the case of the education, interactivity

of the games has been seen as one of the most encouraging aspects for the learning. (Gee, 2008) Many facets of game design patterns are reviewed in Liukkonen et al. (2015)., but from these the most relevant for our work were Gamification Patterns by Ašeriškis and Damaševičius (2014), with Patterns for Motivation by Holopainen and Björk (2008), Game Dialogue patterns by Brusk and Björk (2009), and general game design pattern collections by Björk et al. (2003), Björk and Holopainen (2005) and Björk (2017).

The next section of this paper explains how and what kind of a gamified system we have created. As our work is work in progress, at this point we do not have results from a field study to share. Instead, we will discuss future potential of the system for the research of gamification and its effects.

2. Life in Finland – Work in Progress

Work was started with a broad topic of creating and studying 'A gamified system to help the integration of refugees and immigrants'. From this starting point we came up with the idea for gamifying the existing material created by bureaus whose responsibilities these tasks, simultaneously widening our potential user base by including other groups visiting or staying in Finland, e.g. tourists and exchange students.

As gamification is about using game design elements in non-game context instead of making a game (Deterding, 2011), we chose to create an interactive novel that uses the original material as a source for its story. There is also a comic called 'Finnish Nightmares' which combines humor and cultural differences, but in traditional static comic style. During the early design meetings, the intrinsic motivation was seen as a something that should be encouraged (e.g. Zichermann & Cunningham, 2011), and with interactive novel we have available several ways how we can nurture the users motivation.

Technically our novel is HTML5 product that is created using commercial game engine Unity 3D version 5.4 with a Playmaker extension. Unity offers the platform for creation of the game-like applications and makes it possible to publish them on several platforms. Playmaker is a plugin for the Unity 3D engine, which provides a node-based visual scripting interface for the creation of games. This makes it possible for artist and designers with less knowledge about programming to participate on the creation process along with the programmers.

As our novel follows the traditions set by earlier visual interactive novels, our storyline is rather linear. This is also supported by Ondrejka (2008), as it is noted that games should not present different story paths just to keep the students playing longer. In our storyline, the protagonist of the story has arrived to Finland without knowing much about the country and people living there. Protagonist has an apartment, but it is lacking most of the supplies and things needed for prolonged living. For this reason, he/she starts the day by going out and taking a bus ride to the city center. During this trip, he meets her neighbor Teppo at the bus stop who is present in the following Figure 1.
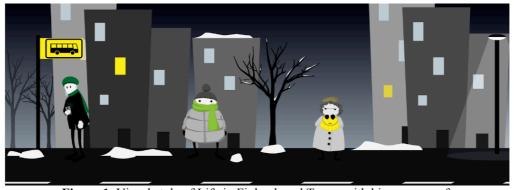

Figure 1. Visual style of Life in Finland, and Teppo with his green scarf.

In here the protagonist begins to learn about Finnish customs, which might sometimes be quite quirky to outside observers. With Teppo, the user takes an adventure to Finnish everyday life, from commuting and shopping to working, studying and healthcare. During the novel, Teppo acts as a native guide to the user, and helps to tackle one of the biggest challenges in integration education:

Communicating silent information which is one of the central themes. How do you pass on such information that is usually taken by granted by native residents, and may not be mentioned in the more "official" material?

In our approach, this is done with the help of humor, the user everyday scenarios about Finnish life, and advices how to interpret Finnish behavior. The user learns for example that if a Finn might take stairs, if his/her neighbor is going to use the elevator too. And that a Finn might rather stand than sit beside someone strange - when in a bus as presented in Figure 2. But then, at sauna, while being naked, he is quite happy sit right beside and chat with strangers.

Figure 2. Stereotypical Finns on a bus.

Overall graphic design of our work is rather simplified. Main color scheme is in grayscale, but splashes of color are used to enhance characters and interaction points. Though the world of Life in Finland is grey, it is not, as can be seen as story progresses, as dull and melancholic as it might seem at first. As the whole story, the visual design plays with stereotypes about Finnish culture. Visuals play an important part in communicating the story. Though there is some narration and dialogue in the novel, we felt "wall of text" effect is avoided.

Character design is likewise simplified, simple and cute, even a bit primitive. Characters are animated through simple movements of joints - animation style aims to be more "animated pictures" than full animation. Animation is also used to differentiate characters through slight variations in movement animation style. The user has no avatar, as that would have presented some very difficult challenges considering race, gender and other identifiable features, which might have made the novel less approachable and relatable. The user interacts with the world through "the fourth wall".

Novel has two progress indicators, city map and a notebook. These are also part of our extrinsic motivators to keep the user returning back to see either new content or to refresh their learning with the old material. Map, which is on following Figure 3, is used to guide user through the contents of the novel. At the beginning there is only the apartment and bus stop to access, but more will be added when user achieves the needed background information. All the places that are in the map can be visited several times.

Figure 3. Map with some potential locations to visit.

Map is not connected to user's real surroundings neither it is using the mobile devices location services. But, the utilization of real surroundings could beneficial feature that could further motivate the users.

Notebook, presented in Figure 4, collects automatically the phrases, keywords, customs and other information that could be helpful for someone who is new to Finland. Notebook also contains the chapter list of the Ministry of Education and Employments Guide to Finland. From here user can access the information and previously visited locations related to different topics in the guide. Characters they have met and the Finnish archetypes they present are also included in the notebook for future reference.

Figure 4. Notebook containing instructions for the user.

We did not use points or badges as they do not fit our design goal. Badges also have bit a contradictive reputation. Hamari and Koivisto (2015) and Hamari (2017) have tested them to be effective, but others (e.g. Chou, 2015) have called them the overused and simplified method of turning everything to a "game" by just adding them.

The novel is intended for being a single user experience. The main language of current version is English, but it includes some Finnish as well, to for example convey common signs and typical everyday phrases. User interacts with the novel by tapping and panning. This interaction style is not only simple, it also references classic point-and-click -adventure games, to enhance the feeling of "adventure" to the user.

The novel is divided to seven chapters, and chapters to scenes. Example of scene could be the previously presented bus stop and bus itself. The chapter division is taken from Ministry of Employment and Economics' guide (2017), which emphasizes the connection between the guide and our product. Scenes in turn are based on individual cultural habits, quirks and other relevant information.

3. Discussion

At this point of our interactive novel has not been implemented fully. We have a working prototype with full functionality, but only first few scenes have been finished. For these reasons the prototype has not been yet tested with actual users on the field.

Before we have had the possibility to run experiments with the prototype, we can only speculate about the strengths and weaknesses of it. Based on previous studies, we believe that the strengths of our novel are in the possibilities of the used intrinsic motivation elements (e.g. humor and interactive story). These might give us the potential to arouse people's interest more than the current state of the material (stack of A4's). On other hand, the current level of interactivity might not be enough as we lack the skill based game elements.

We hope that in future we could run these experiments, and compare the effectiveness of our novel against the more traditional and passive methods of passing the cultural information. Future work also includes research about which specific gamification elements and related game design patterns are beneficial in our case.

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