The Social Network of Changing Your Mind

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Sammanfattning

Som vi i allt högre grad vänder oss till sociala medier för vår nyhetskonsumtion, två besläktade medier fenomen som påverkar mediekonsumtion är "Ekokammare" och "Filter Bubble". Ekokammare är fenomen där vi tenderar att ha samtal endast med dem som har samma intresse som vi själva, medan Filter bubbla skapas av sociala medier och informationssöknings teknik som tenderar att prioriteringar och visar oss saker man redan vet att vi gillar.

Syftet med denna avhandling är att föreslå konstruktionslösningen för sociala medier som kan motverka effekten av "Echo kammare" och "Filter Bubble". Den exakta metod som används på denna avhandling är att spela centrerade designmetod och både den mellanliggande och slutliga utvärderingen som görs genom kvalitativ bedömning.

I slutet presenterades en designlösning av "Viewlette"- spelet. Man kan dra slutsatsen att den föreslagna designlösningen kan ha en tendens att motverka effekten av "Filter bubble" och "Echo chamber" på nätgemenskap, genom att människor som har motstridiga synpunkter fortfarande lyssna på varandra och förstå ett argument från olika perspektiv.

Nyckelord: Filter bubbla och Echo kammare, Gamification, Play-centrerad designen

Abstract

We are increasingly turn to social media for our news consumption two related media phenomenon that influence media consumption are the "Echo chamber" and "Filter Bubble". Echo chamber this the phenomenon that we tend to have conversation only with those that has the same likeminded as we do while Filter bubble is created by Social media and information retrieval technology that tends to priorities showing us things it already know we like.

The aim of this thesis is to suggest design solution for social media that may counter the effect of "Echo chamber" and "Filter Bubble". The precise method used on this thesis is play centric design method and both intermediate and final evaluations were done through qualitative evaluation.

At the end a design solution of Viewlette game were presented. It can be concluded that the suggested design solution may have the tendency to counter the effect of Filter bubble and Echo chamber on social networking site by enabling people that has conflicting points of view to still listen to each other and understand an argument from different perspective.

Keywords: Filter bubble and Echo chamber, Gamification, Play-centric design

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1. Introduction

The development of internet technologies has added a diverse rich information environment to the modern societies and worlds we live in. People all over the world are able to connect to each other via social networking sites, they are able to communicate and share ideas, opinions.

As people increasingly turning to social media for their news consumption, there are two related media phenomenon that increasingly influence our media consumption. The "Echo chamber" is the phenomenon where we tend to have our conversation only with those likeminded (DiFonzo, 2011).

The "Filter bubble" is created by technology and tends to prioritise by showing us things it already knows that we like. The term "Filter bubble" was introduced by "Eli Periser". It refers to the limited scope of information determined by the user's interests that isolates her from any information that does not fall within his or her scope (Pariser, 2011).

The aim of this thesis is to suggest design solutions for social media that may counter "Echo chamber" and "Filter bubble" effects. The thesis proposes a gamification concept based on known techniques from mediation, with the purpose of helping people with conflicting opinions and ideas to still listen to each other's point of view and understand the arguments from another perspective. The proposed design is developed through an iterative design process.

1.1. Structure

Chapter 1 will discuss the purpose and aim of this thesis, chapter 2, will discuss the thesis background and related works.

The main methodology will be discussed in chapter 3 more details on specific method and how these methods were applied in this thesis. In chapter 4, the design process and play testing session will be discussed. Also the various users' studies that were performed and the result from the play testing session will be discussed.

In chapter 5, the final design concept, design implementation and the design evaluation will be discussed, in addiction the analysis of the result of this thesis design solution will be discussed and compared with previous design solutions.

The final chapter will be chapter 6, where the conclusions together with the limitation and future research on this thesis will be discussed.

2. Background

Danah M. Boyd defines Social Network Sites as: "Web-based services that allow individuals to construct a public or semi-public Profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site." (Boyd, 2007)

Social network sites are more about identity construction and identity management and the way identities are constructed and manage on social networking site is through the performance of the users.

2.1.   Gamification

The design approach of this thesis is gamification: the use of game design elements in a non-game context (Deterding et al., 2011).

From a media perspective, gamification is not a new concept; it has existed in the past and there have been pre-digital predecessors of gamification (Fuchs, 2014). A well-known example was when Mark Twain in 1883 tried to develop an easy way to teach his daughters to remember the English Monarchs' and the corresponding dates when they start and finished ruling. Twain developed a playful method of remembering dates, name, and number by mapping them to positions on a piece of land. In the end, Twain's daughters were able to learn the dates in two days. Today, we would consider this gamification in learning, or alternatively serious game design (Twain, 2009).

 The recent development of internet technology and accessibility of large amounts of data enable the implementation of positive feedback mechanisms that are used to transfer some of the game elements into non game contexts in gamification, for example in the case of frequent flying programmers (Bunchball, 2010).

Moreover, gamification techniques are not only used in learning – another common use is in advertisement to increase loyalty of consumers with particular brand, like in the case of the popular Miles & More programmed by Lufthansa and other star alliance airline. The programme works in the way that the passenger can get points and gather points through their flights journeys, which is labelled as miles. Through the program, Lufthansa airline is able to motivate and change

their customer behaviors to fly more with their airline by applying gamification method and incentive to create customer loyalty with their brand.

Gamification has been criticized by Ian Bogost. He argues that gamification has little to do with game design. That gamification tends to reduce game to a predictable series of mechanisms to attract players or customer, through the use of points, leader boards, ranking and badges as a form of reward to motivate the players and make them feel gratified (Bogost, 2011). Bogost argues that game design has been trying to complicate such techniques by introducing more demanding tasks that require the player skills and questioning the experience of playing through a complex narrative. Compares to gamification does not attempt to question the player's experience through complex narrative rather, gamification is uniquely interested in maximizing the activities of the users and potentially transforming them into a better customer or loyal contribution to their business brand.

Furthermore, Bogost criticizes gamification that should not be decorated by the word game instead be correctly called by the word "exploitation ware". Also, Bogost's opening claims is that "Gamification is marketing bullshit invented by consultants as a means to capture the wild coveted beast that is videogames and to domesticate it for use in the grey hopeless wasteland of big business" (Bogost, 2011)

In response to the criticism on gamification Nathan Lands responded that gamification is not all about point based system. That is more about the importance of fun and playfulness. He went on to say that gamification is re-imagining experience with fun in mind. By applying gamification method, it provides an amazing opportunity to experiment with creating a more fun world.

In his article "exploring the endgame of gamification" (Nicholson, 2015), Scott Nicholson defines gamification as the application of playful or gameful layers to motivate involvement and engagement within a specific context (Nicholson, 2015). Previous and current application of gamification mostly focuses on allocating points as a means to reward/motivate users. The mean concept of reward-based gamification is the allocation of points to manipulate and control player's behaviors.

The aim of gamification is to motivate people to engage in a specific context. If the aim of the gamification design is for the short term, making use of rewards system such as level, points and badges can be used as a primary motivational tool to bring about this engagement in a specific context. But if the aim of the gamification system is about long-term change, the idea of using level, points and badges as a means of reward are not enough to engage the interest of most of the users, and it can do more harm to someone's motivations than good (Deci, Ryan 2004).

If gamification designer desire to create systems that aims for long-term change, they should be designed to engage someone in an authentic manners or ways (that is tapping into the intrinsic motivations) .That are directly connected with the real-word setting. This means that gamification systems that are designed to help people to engage with existing communities like for example the local communities and information resources that are already available in the real-word context.

The main goal is to help player to find the aspect of the real word that is meaningful to them. So that at the end players does not need to follow the role of gamification system. The player is left to set its own real-word goal in a particular context. Like for example in the case of Nike+. It made use of this model. In the beginning, the player just collected points as they do activities. As soon as they get into the gamification system, they are given the opportunity to set their own person fitness goals in relationship to their own person interest. At the end, the personal goals created by player´s are more important than the points collected. But the points will still be counted in the background on the system (Nike+, 2006).

2.2. Related Work

Previous research on countering the effect of "echo chamber" and "filter bubbles" on social network mainly focuses on either creating and developing digital tools and algorithms to counter the effect of echo chamber and filter bubbles on social network sites (Nagulendra and Vassileva, 2014) (Xing and Doozan, 2014). Furthermore, previous research focuses on using visualisation to counter the effect (Munson and Resnick, 2013). By applying visualisation showing the users various bubbles that symbolises where users are in the echo chamber and showing their consumption habit.

Munson et al. (2013) created an internet browser tool called Balancer. The Balances tools help to track users reading activities and display their reading pattern and biases in order to increase awareness (Figure 1). Balancer works by showing the users an approximate histogram of user conservative and liberal pages. The objective of the design is to change users reading behaviour to become more balanced. However, only a low number of users actually changed their reading behaviour. Still, the balancer may serve as a tool to increase awareness of bias.
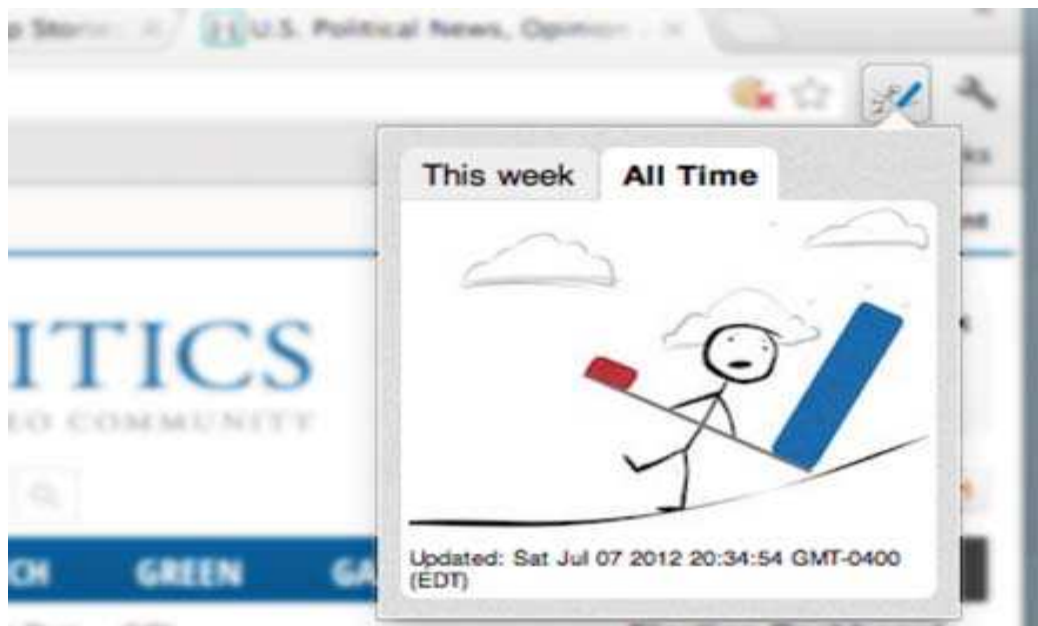
Figure 1.Balancer (Munson et al, 2013) " The icon shown persistent indication of the reader's reading behaviour and history for the week,"

Scoopinion is a browsers add-on tool that tracks news sites and the different types of stories that the users read using the browser. Scoopinion displays visualisation, summarizing the user's reading behavior by showing users media fingerprint. (See fig 2).

Scoopinion also personalises recommended news/stories based on the user's reading behaviour habits and history. The tools assume that users always choose to read more diversely. It provides users visualisation of their information consumption habit to increase their autonomy of information. The aim of Scoopinion tool is to prioritise the value of choice and autonomy of information.

Figure 2. Scoopinion (2014) is tools that visualize user's news consumption habits. The large circles represent news items that the user consumed the most.

Xing et al., 2014 developed a tool called Bobble. The tools enable users all over the world to compare their Google search result with each other. (See fig.3).

The tool works by utilising users Google search queries worldwide. For example, every time the user performs a search keyword. The keyword will be distributed to Bobble member worldwide that perform similar Google search. The users Google search result will be displayed in yellow, while the result that was displayed in other users' browsers but missed out from the users search result will be displayed in red. The aim of bobble is to monitor and tracks the inconsistency that arise from user search queries result.
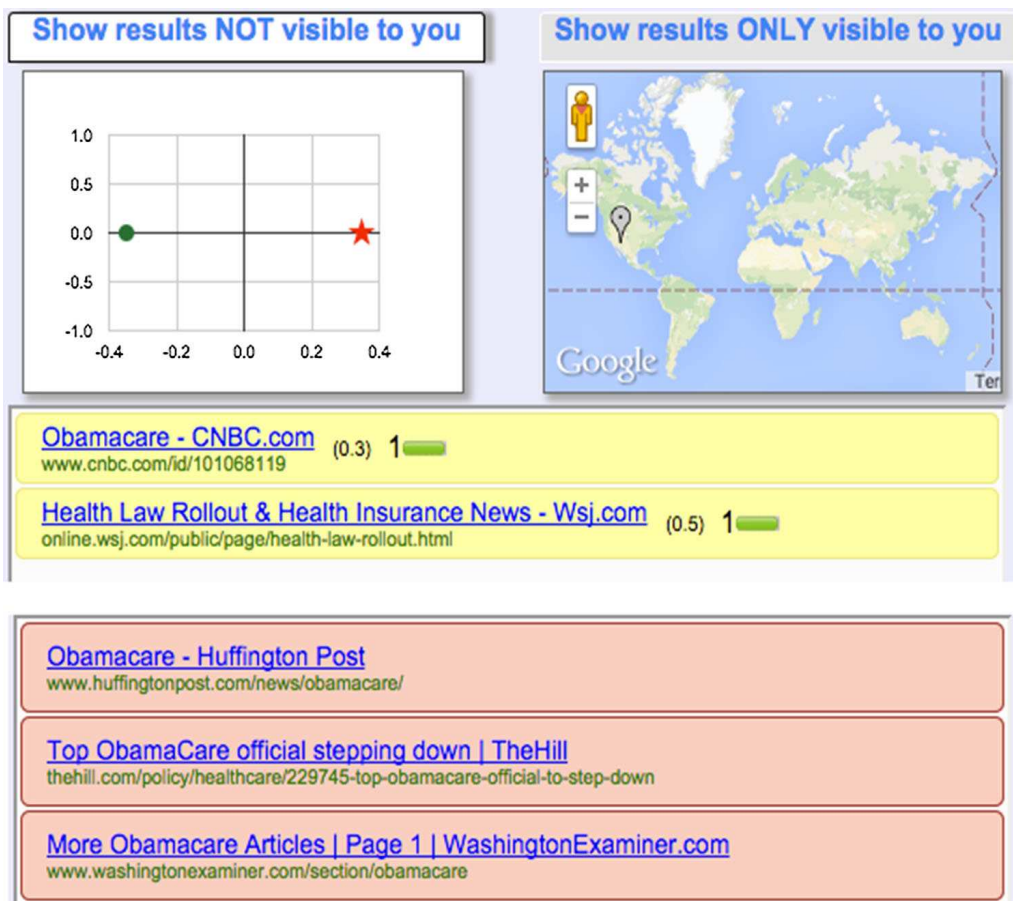
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Figure 3. (Xing et al , 2014)showing the inconsistency of users Google search result. The result displayed in yellow represent what only the users can see, while the result displayed in red represent what is missed out from the users search result.

Nagulendra and Vassileva (2014) developed an interactive visualisation that provides the users of social networking site with awareness of various personalization mechanisms (Fig.4). The tool shows users the content that was filtered away. The visualisation has been implemented in a peer to peer social network site called MADMICA. The tool shows users which categories and which friends are in their bubble. The visualisation of bubbles shows users where their friends are in the bubble. Furthermore, the tool gives the users the option to control the algorithm. By allowing the users to manipulate the visualisation to either "escape" the bubble. By adding or removing a friend from a discussion concerning a topic from their filters. The aim of the tool is to provide users control over the filter bubble and increase the awareness of how the filter algorithm works.
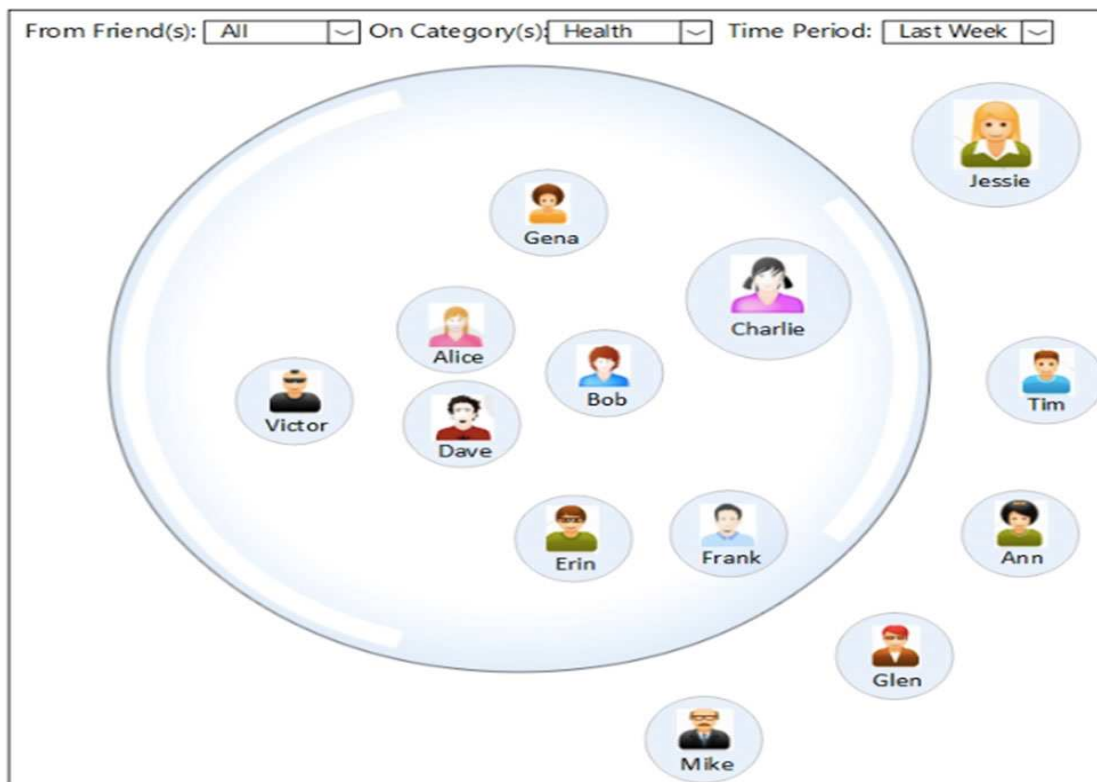
Figure 4: Nagulendra and Vassileva (2014) visualization allows users to control their filters bubbles.

Another tool created to combat the effect of echo chamber and filter bubble is an application called Political Blend (Doris-Down et al., 2013). The Political Blend is a mobile application developed to bring people together based on their political differences. The main aim of the mobile application is to combat the effect of echo chambers and filter bubbles. The app works by bringing people that have different beliefs face to face in the physical world to have a cup of coffee together.

Figure 5: (Doris-Down et al., 2013) Images from Political Blend App. Bring people together that has different political point of view

At the end of the studies, the developer of Political Blend found out that people are willing and open to meet people that have 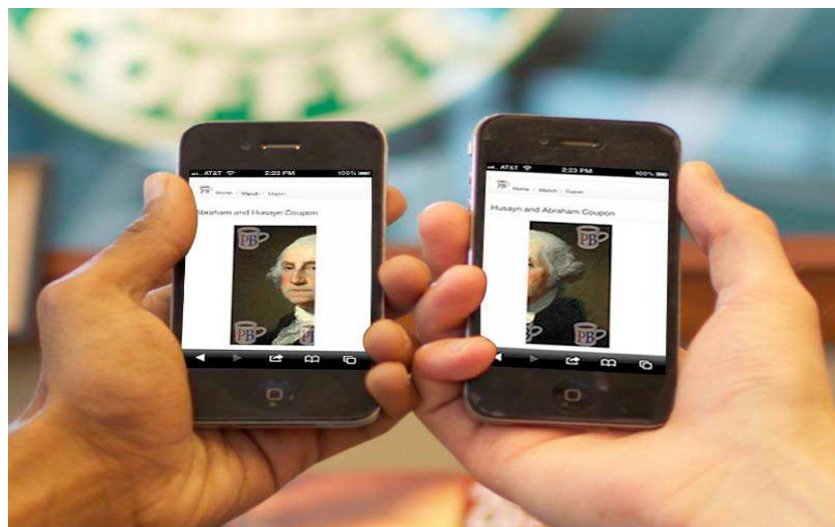different beliefs from them even those that has ideologically oppose them in their beliefs. The studies were carried out with interview method, because of the nature of the studies a semi-structured interview protocol was chosen and in total the testing of political blend application lasted for 3 weeks. The purpose of the interview was to find out about the participants experience from using the application.

In conclusion previous research provided an insight into what have been done to counter the effect of filter bubbles and echo chamber on social network website. Furthermore, the previous research above influences the designed solution on how they are able to counter the effect of filter bubble and echo chamber. By bringing individuals randomly from different places and matching them together. Similar approaches were applied in the design of the Viewlette game. The game works by bringing people together that has conflicting point of view and matching different users randomly from different places.

The major difference between this thesis and previous research is the application of gamification concept as a means to counter the effect of "echo chamber" and "filter bubble", with the purpose of helping people with conflicting opinions and ideas to listen to each others point of view and understand the argument from another perspective. By applying some playful layers in the design solution to make it fun, interesting and create motivation for the users.

3. Method

This thesis is framed within the overarching methodology of research through design. "Research through design is an approach to scientific inquiry that takes advantage of the unique insights gained through design practice to provide a better understanding of complex and future-oriented issues in the design field (Frayling, 1993)."

The more precise design method of this thesis is play-centric design. Finally, both intermediate and final evaluations were done through qualitative evaluation. This chapter describes and motivates this overarching methodology.

3.1. Play Centric Design

The play-centric design method is an iterative design method that puts the players at the middle of the development and design process. The process begins with good understanding of the players and context. By understanding the context of the players the designer will be able to design meaningful games for the end users (Fullerton, 2008).

The main reason why it is important to apply play-centric design approach is that it enables the designer to involve the players in the designed process right from the conception phases to the completion phases.

The components of play-centric design approach are; setting player experience goals, prototyping, play testing and iteration (Fullerton, 2008, p. 31).

Play-testing should be seen as distinct from both usability testing and quality assurance. It is carried out to understand whether the game achieves your player experience goal. The main aim of play testing is to gain useful feedback from the player. There are various ways to carry out play testing. Some of the ways are qualitative and informal, and structured and quantitative. The designed process, that was made use of is qualitative and informal ways of play testing. The reason why qualitative and informal play testing was used is to understand the player's experience in the game and to generate ideas for improvement of the prototype.

The play testing method was applied in this thesis by following these steps:

Before recruiting the first play tester, the designer makes sure he tested himself first. During the design of the first prototype, the designer repeatedly tested the design on his own to determine if the prototype were ready to be tested by someone else.

When the designer was confident that the physical prototype was ready to be tested by someone else, then the designer decided to test with close friends, and some family member to get an insight into the game. After that, the designer proceeded to play test with people from its target audience. The reason while the designer decided to carry out the test this way is to prevent biases in the test result.

Furthermore, the play testing methods that were made use of during the testing session are one-on-one testing, interviews and open discussion. The facilitator was taking note during the entire play testing session. During one-on-one testing, the facilitator sits down with the participant and watch over behind the player or on a one-way glass as the player plays the game, the facilitator takes note and asks questions after the session

The reason why the designer decided to have a one-one interview at the end of the play testing session is to get the players experience during the game. The designer asked an open question to the play-tester, for example if there is something they will like to change about the game? By asking question the designer was able to get more information about the player's experience of the game. At the end the designer conducted a final evaluation by comparing and analyzing the result from the play testing sessions.

The full process of conducting a play testing session is as followed:

1. Create the prototype

2. Prepare test questions and script

3. Recruiting play testers

4. Conduct a play testing session

5. Wrap Up session

6. Methods of Play testing

There are different method of play testing which are, One-on-One testing, Interview method, Open discussion, data hooks methods, group testing and feedback form.

7. Final Analysis: It involves the analyzing of the result from the play testing session and compares the differences.

In this thesis the designer delimits the methods of play testing by making used of One-on-One testing, open discussion and interview method. The reason is that these methods above are relevant in testing the game prototype at this stage.

Furthermore, in this thesis gamification concepts were applied. The reason why gamification concepts were applied is to create system that aims to change the users or player's behaviors on the long-term and motivate players. The gamification system that was aimed to create will be able to tap into people's intrinsic motivations. To be able to attain this goal in the design, the designer made use of a framework for creating meaningful gamification know as RECIPE (Nicholson, 2012), RECIPE stand for the following:

R- Reflection: That is creating a situation that enables the players to reflect to discover a personal connection with the real-word setting. In the design, the players were asked questions that are connected to the real-word setting.

E- Exposition: using narrative and user created stories to create deeper connections to the real-world setting. In the case of the design solution, the users can see answers and suggestions of other users in the real world.

C-Choice: The users are allowed to select different options in the design, either to agree or disagree on a given topic.

I-Information: I provided information to the users of the game, about the connection between the gamification activities and real-world setting.

P-Play: In the gamification design some playful layers was applied to the design solution and the players can decide on his or her own to accept other players point of view or not.

E-Engagement: The players in the game can use the system to connect to other users by showing what they have achieved in the game.

In summary, gamification is not all about transferring game element to non-game context, it's about applying social-technical systems design when designing gamification system and integrate the system with meaning, autonomy and play.

4. Design process

4.1. Conceptualization stages of the design solution

The conceptualization stage is the first step of the design process (Fullerton, 2008, p. 169). During this stage the designer developed multiple ideas for game design that potentially could counter the effect of "echo chamber" and "filter bubbles" on a social network site. The goal was to allow people with conflicting opinions and ideas to still listen to each other's points of view, and understand the arguments from another perspective. The goal was thus not really to make people actively change their mind; only to give themselves time to study alternative approaches.

Brainstorming session

Together with the supervisor, brainstorming sessions were done where we discussed various ideas for games to be created. The brainstorming session started by defining the state of the challenge. We sat down and discussed possibilities of designing a game that provides the players with an alternative point of view on a given topic. During the idea generation stage we came up with some ideas, for example we came up with link sharing game. The idea of this game is that various people will share links about different topics and the players in the game will rate the link with either true or not true. At the end the ideas were discarded because it will not be interesting to just share links with one another without having any form of motivation on the game. Also the possibility of creating a game out of links sharing is low.

Another potential idea that was discussed during the idea generation stage was designing a game that display someone else search result alongside with the users search result. The idea was discarded because there is a similar design solution already designed by someone. Furthermore, the possibility of visualization game ideas was discussed. The visualization game idea works by creating a visualization of different bubbles that the users can manipulate to counter the effect of filter bubble. The idea was discarded because such design solutions have already been created.

The brainstorming session lasted for about 60 minutes or so. At the end an initial design idea came up on creating a game out of a spinning wheel. The initial design idea was that it will be in a form of a spin wheel game that participant can enter their answers to the question of the day and spin the wheel to get other people answers. The participants have the choice to rate the answer gotten from the wheel either with "agree" or "disagree". The game will be integrated into a social network site like for example "Facebook".

The first initial design idea and first design sketch are as followed:
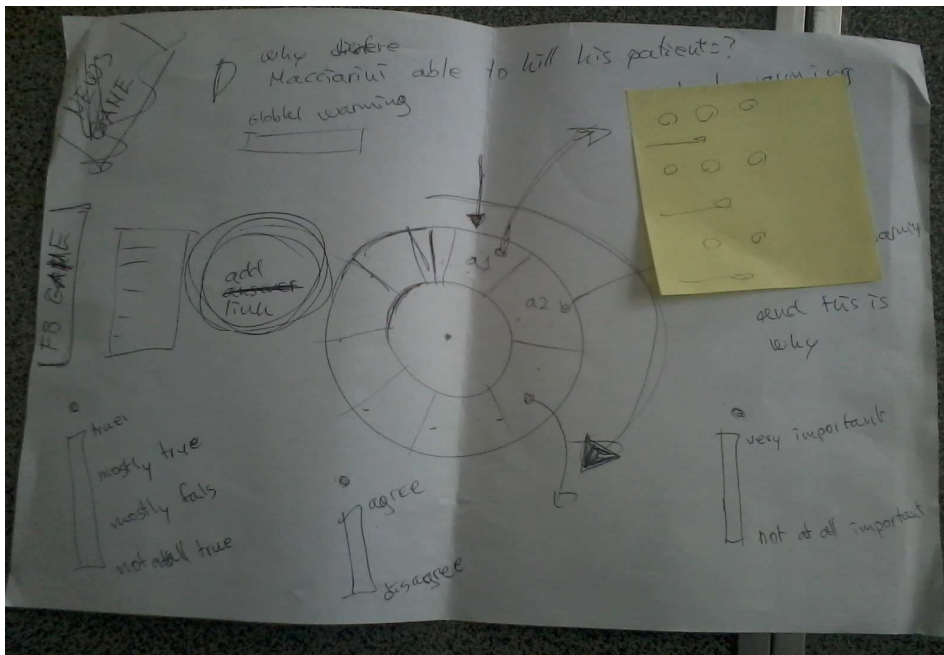
First idea on the spin wheel game

At this stage of the development the rule that was envisioned is a game where participant answer the questions of the day. After answering the question of the day, participant is allowed to spin the wheel to get other people point of view. At the end they have the option to rate the answers receive from the wheel. With either "agree nor disagree" or "very important nor not at all important". At this stage it was not yet decided what way the player will rate answers received from the wheel. That was the initial suggestion on how the game will be played. Furthermore, by now the reward system on the game was not yet decided.

The reason why the idea of the spinning wheel was chosen to go further in the development phases in comparison with other ideas generated was that this particular idea has the tendency to tap into the intrinsic motivation of the players through curiosity of the players to find out about other peoples point of view by spinning the wheel. Also the spinning wheel idea has the tendency to influence the player's point of view through playful design layers that is integrated into the spinning wheel game.

In addition, during the implementation of the conceptual idea of the spinning wheel game into a playable physical prototype it was discovered that some of the characteristic envisioned in the conceptual stage were unable to be implemented into playable physical prototype. These problem where discovered when the designer of the spinning wheel game tested the prototype on his own. The characteristic that were difficult to simulate in the spinning wheel game idea was the random effect of the spinning wheel. At this stage the designer spent some time thinking on how to simulate the

random effect on a physical prototype. Eventually the idea of using a dice to simulate the random effect in the physical prototype came.

At the end of the session, this particular idea was chosen to be developed more and explored the possibilities of creating a game out of it. By adding some game mechanics and performing early prototyping and testing.

4.2. Users Study and Changes Needed
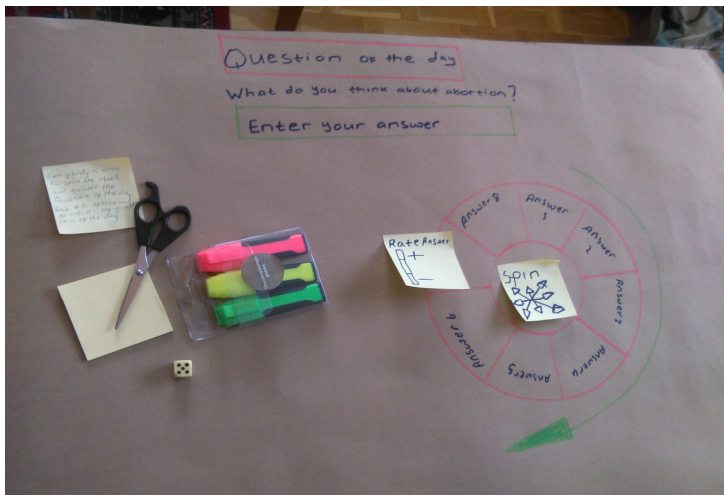
Prototyping

Prototyping is the creation of a working model of an idea that allows designers to test with the end users of a product to get feedback on possible improvement on it (Fullerton, 2008, p. 196).

The different type of prototyping method is; software prototype, video prototype, visual prototype and physical prototypes. Also, the most important thing to remember is that prototyping is not the final design. It is simply trying out one's design ideas to find out on what is working and what is not working.

 The prototyping method that was made used of during this thesis is called physical prototype.

 The advantage of physical prototyping is that it focuses on mainly the game play rather than technology and also it is easier to iterate design on paper compare to software prototyping. This allowed the core game play mechanism to be tested on the design with players without placing focus on the look and feel of the prototype or the mechanisms of implementation.

The first physical prototypes were created with some household's object such as post-note, cable paper, pen and paper, hand drawing and scissors. Dice were used to simulate the random effect of the spinning wheel. The images are as followed

Images of material used for creation of my first prototype

 The rules that were simulated at this stage is that for a player to start playing the game. The first step is to answers the question of the day by writing its answers on a post note,(It is require for the player to answer the question of the day before they are allow to spin the wheel) . When that is done the players can go ahead to spin the wheel to get other people point of view.

 In the physical prototype for the player to spin the wheel it is require to throw the dice and the number that appeared on the dice will be the number the users will get the answers from the wheel. For example if the player throw the dice and get number "4" on the dice the player will take a look at the answers that appeared as answers 4 on the wheel. After viewing the answer from the wheel, the users has the option to rate the answers from the wheel with either agree or disagree. At this stage in the development process the reward system on the game has not yet be decided. For more information about the interaction on the game take a look at the images from the play testing below.

4.2.1. Play testing session with the first design sketch

The play testing session started with the play tester answering the questions of the day on the prototype, the images are as follow,
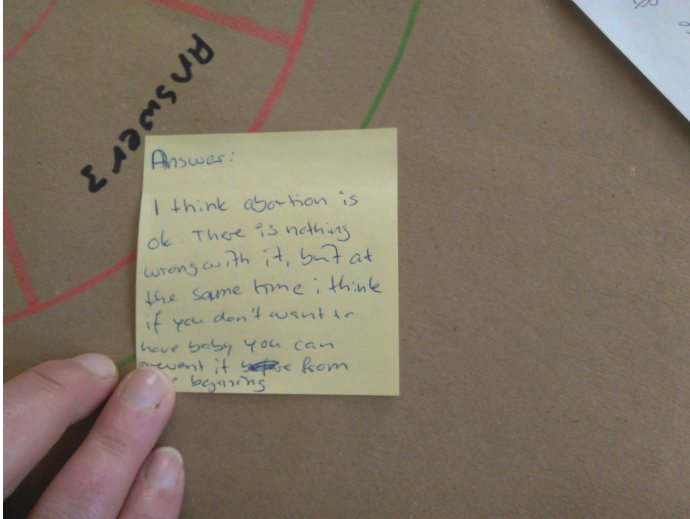
The play tester answering the question of the day

During the play testing session, dice were used dice to simulate the random effect of the wheel. When the play tester finished answering the question of the day, the answer is automatically entered into the wheel.

The play tester decided to throw the dice and got number 5 on the wheel as the answer to the question. But she did not agree with the answer to the question so she decided to rate the answer as not agree.
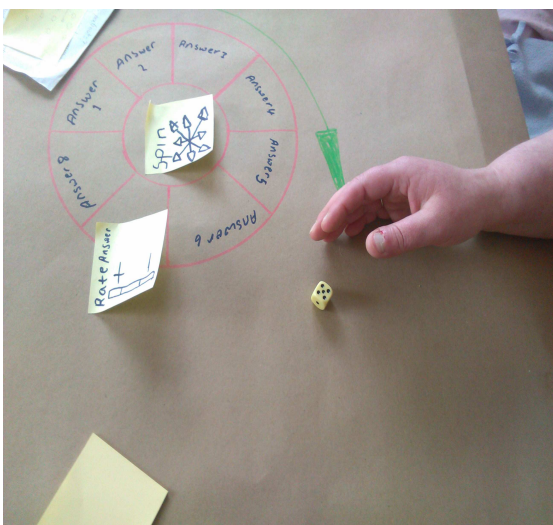
Play tester spinning the wheel by throwing the dice   *Play tester rating answer gotten from the wheel.*

More images from the play testing session.

The Wheel and Dice

Post note answers on the wheel.

Play tester throw the dice and got answer 2

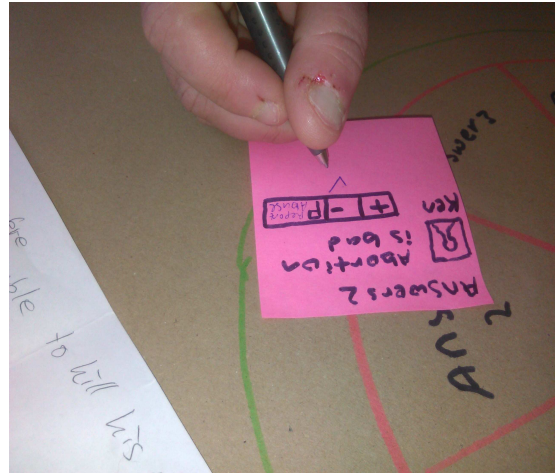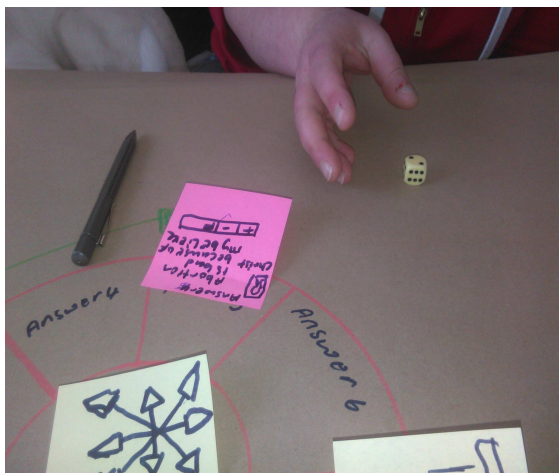*Play tester rating answers.*

4.2.2. First Users study

The first user study were qualitative studies and the purpose of the study was to investigate/find out if the game concept was understandable to the user and if there were some specific problems associated with it.

The tests were carried out only with a few testers. The reason is because the game prototype was still very roughly sketched and this would be enough to find the biggest issues associated with the game concepts. The test is users centered but not users participatory. That is the users are not allow to change the game but the users are allow to make suggestion on what they think would make the game more fun and engaging for them to play.

By allowing the users to make suggestion during the testing phases enables the designers of the game to developed game that is understandable, fun and interesting for the end users. But at the end the designer decide what suggestion to take from the users and what not to take. The reason for that is that some time the suggestions from the users are not vital in the game design concept.

The users study consisted of three phases: (1) A play testing session, (2) Result from the play testing session, (3) Discussion about the play testing session

Structure of the test

The play testing session consisted of the introduction part which lasted for about 2 – 3 minute. After the introduction part the next steps is the warm-up discussion which lasted about 5 minutes. Follow by the play session that lasted for about 15 to 20 minute. At the end of the play session, the facilitator and the play tester proceeded to the discussion of the game experience. Which lasted between 15 to 20 minutes and ended the play session with wrap up and concluding the play testing session.The test script for the study is included in Appendix A

4.2.3 Results from first user study

The tests were done with a single play tester. The play tester will be represented with "play tester A".

"Play tester A" is an average game player that like playing games on Facebook. Some of the game that "play tester A" likes playing its Super Mario game and board games. "Play tester A" thinks that game is fun and interesting to play. Normally "Play tester A" play game at home and on the internet. The last game that she played was a Facebook game called Backgammon it is a form of a board game.

Discussion about the play testing

After "Play tester A" finishes playing the prototype of the game. The facilitator decided to ask the play tester some questions to find out about its experience of the game. "Play tester A" thinks that the game is a nice idea and she thinks that the idea provided another way of designing forum on social networking sites. But the differences between this design solution of the spinning wheel and forum is that participant cannot communicate with other participate directly. Furthermore she thinks the objective of the game is crystal clear. That the game is to get other people points of view. Also "play tester A" said that if she has to explain the game to someone else. That she will tell them that the game is where you can answer the question of the day and spin the wheel to get other peoples point of view on a given subject. When the point of view of other participates appeared on the wheel, the player can rate the answers with either agree or disagree. "Play tester A" thinks that the game is clear and not confusing.

In conclusion "Play tester A" was able to understand the object and the purpose of the game even if the game prototype is roughly sketch at this stage. Also what were learnt that was good about the design solution is that "Play tester A" thinks that the design idea is an innovative idea on how to design a discussion forum on social network sites. In addition, what were learnt from the play testing session on what was bad in the design solution at this stage is that the game does not have a clear rule on the reward system. Also the interface of the prototype needed to be improved to enable it to be tested with more play testers.

What were kept for the next session of the play testing is the main core mechanism of the game, concept and idea on how the game works. What needed to be changed for the next session was to have more visual prototype that looks nice with a clear reward system.

4.3. Second design sketch (Second Iteration)

The design was changed in the second design sketch due to the feedback that was received from the first iteration/testing. The changes are as followed.

- Improving the prototype of the game: In the second design sketch the design was changed to improve the prototype by making it more visually appealing.

 The reason for this change in the design was to make the prototype more visually appealing so that it can be tested with more play testers. In addition by making the prototype more appealing it makes the game idea easier to understand.

Furthermore, the prototype was improved more by having an additional incentive in the game design. The reason for these changes in the design is to add additional incentive to the spin wheel game idea. For example personal profile page and points system can be used to motivate some of the players to share their achievement in the game to other players in their personal network.

 Also the reason of adding "share button" was to make the design more sociable. Moreover the idea of adding arrow on the middle of the wheel prototype is to simulate the random effect of the spinning wheel. The players can easily move the arrow to the number that appears on the dice in corresponding to the number to the answers on the wheel. Furthermore by adding arrow to simulate the spinning effect made the interface more interesting and visually appearing compared to the first sketch.

The core mechanism of the game was not changed from the first prototype.

4.3.1. Description of the game rules / simulation

The description on how the game works was similar to the description at the first iteration with just some few differences because of the changes and addictions in the design solution.

The player starts playing the game by answering "the question of the day". The player proceeded to spinning the wheel to get other people's point of view as answer to the question of the day. When the player gets the answer on the wheel, the player has the option to rate the answer and get some points. The points will appear on their profile, and at the end the player has the option to share his achievement of the reward gain on the game on their personal network for other people to see. The images of how the game was played are as followed
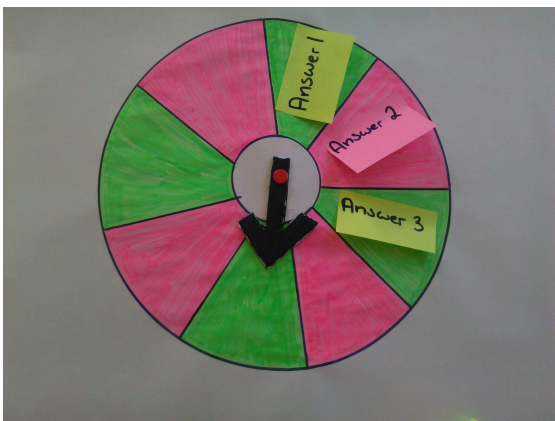
Picture 001: developing the prototype

Picture002: developing the wheel more
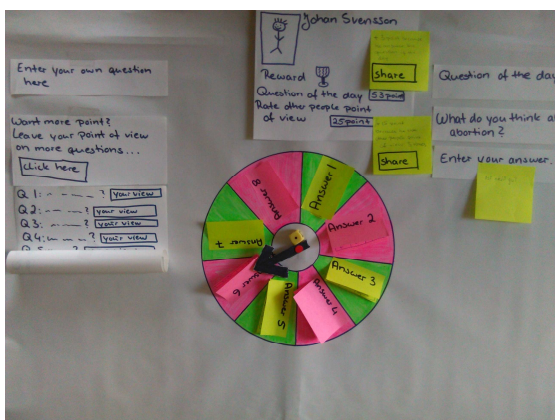
Picture 003; Full prototype that I used for the testing
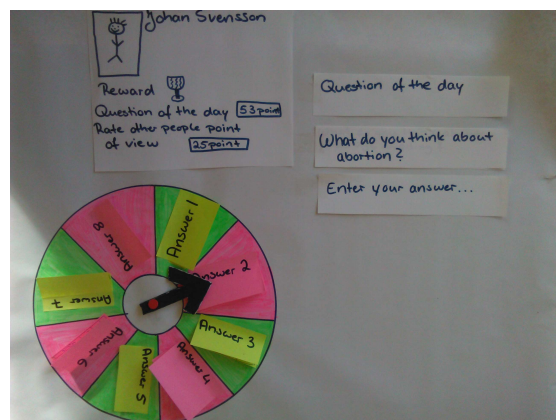
Picture 004: showing profile and point.
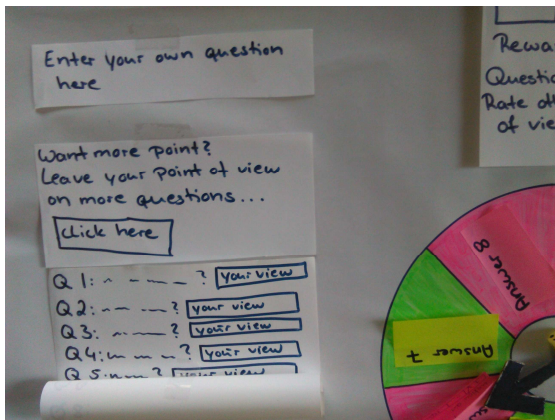
Picture 005: Addiction incentive in the game
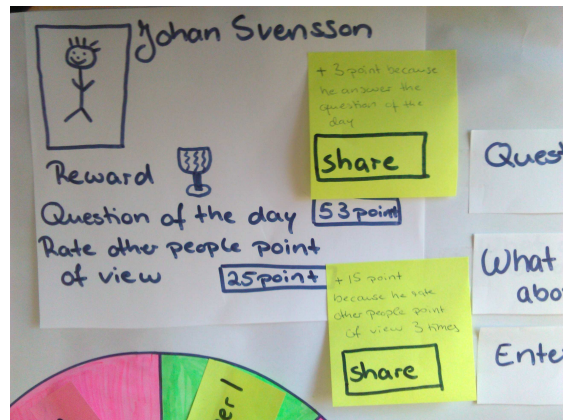
picture 006: Reward to keep the player in the game

Picture 007: Play tester answering question of the day
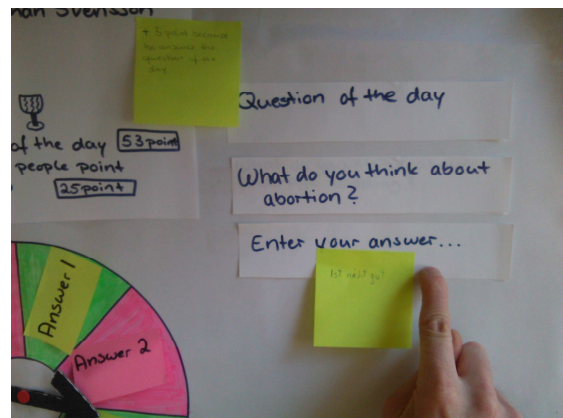
Picture 008: Play tester enter his answer into the wheel

The spinning effect on the wheel was simulated with dice and an arrow sign. The play tester spins the wheel by throwing the dice. The number that appears on the dice is where the play tester will move the arrow to in the wheel to read the answer and rate it to get more points. Also the player gets more points of view to enable him or her to understand the arguments from another perspective.

Picture 009: play tester throws the dice and got four dice

Picture 010: Play tester move the arrow to the number on the

Picture 011: Play tester read the answers and rates the answers
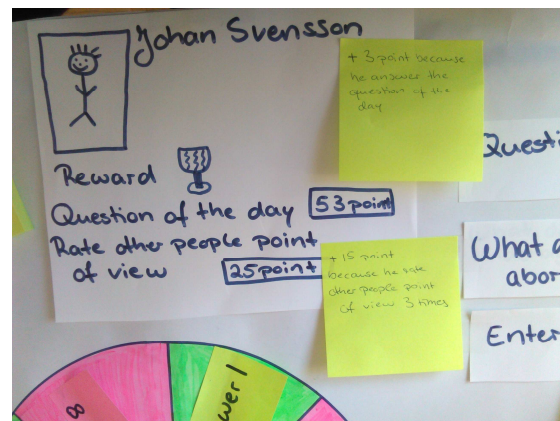
picture 012: Play tester got points as reward.

At this stage the way the game was played is that the player throws the dice. The number that appears on the dice is where the player will move the arrow to the corresponding number on the wheel. When the player gets to the session displaying the answer to the question of the day, they can open and read the answer to the question of the day. At the end the player can rate the different answers. The play tester played the game for about 25 minutes. The player was allowed to spin the wheel as long as he wanted.

4.3.1. User testing, second iteration

The second user study was also a qualitative study. The purpose of the study was to find out if the game enables the player to understand an argument from another perspective and if the game is fun and interesting to play.

The studies were carried out with more play testers compared to the previous study in the first iteration. The difference between this user testing/second iteration and the first iteration/user testing is that in the first iteration the purpose of the study was to find out if the game concept was understandable to the user and if there were some specific problem associated with it. While in the second iteration the purpose was to find out if the game enables players to understand an argument from another perspective, and if the game is fun and interesting to play.

Furthermore, another major difference between the first iteration and the second iteration qualitative studies is that the first iteration/user study was carried out with just one participant, while in the second iteration/user testing the study was carried out with a total of 4 different participants.

The reason for these changes is that during the second iteration the design sketch was more neatly sketch compared to the first design sketch. These enable the prototype to be used to conduct more user studies with more participants. Moreover, what were aimed to investigate at this stage of the design process that it would be better to draw conclusion from more participants. That is why the user studies were carried out with more participants to get more quality result.

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Structure of the second users testing/Iteration

The structure of the second play testing session was similar to the first play testing session. The differences lie on the questions on the user experience in the game. The reason why the question is different from the first play testing session/user studies is that both user studies aim to achieve different goals. Also the test script from the first user studies is different from the test script for the second user studies, but the structure of the test is similar. The test script for this study is included in Appendix B

Description of the second play tester

In the second iteration the play tester will represented with "Play tester B".

"Play tester B" is an active game player and the type of game he normally plays is slot games, poker game, black jack and Price of Persia. The reason why he likes to play game is for him to relax from work. He thinks that game is fun and interesting to play. "Play tester B" normally plays game on the internet with his mobile phone. The different between "Play tester A" and "Play tester B" is that "Play tester B" is more of an active game player that plays games on a regular basis. Both "Play tester A" and "Play tester B" consider the game idea of a spinning wheel very interesting and innovative.

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4.3.2. Result from the second users testing/Iteration

When "Play tester B" has finished playing the game. The facilitator decided to ask "Play tester B" some questions about his experience on the game. The main reason of asking that question is to find out if the game enables the play tester to understand an argument from another perspective. The feedback received from the play testing session is as followed:

The "Play tester B" said after the play testing session that the game enables him to understand an argument from another point of view. When ask if the game change his point of view concerning the given topic in the game. The response received from him is that the game did not change his point of view on how he thinks now. The reason for this response is that the answers he received from the wheel did not correspond to its own point of view. So he disagrees with other point of view that is not in line with his own point of view. Furthermore he said that the game is interesting and fun to play.

Concerning the objective of the game "Play tester B" said that the objective of the game is clear and understandable. "Play tester B" said he will explain the game to someone else, that the game is like a word game. That you and other people can answer the same question, and by spinning the wheel get other people point of view about an issue. The players have option to rate other people answers (point of view).

Also "Play tester B" said that the game is ok and not confusing. At the end of the play session the facilitator asks him how to improve the game. The answer received was that the physical prototype is pretty OK the way it is now. He thinks that the development process should move to the next stage of developing the software prototype. He gave suggestion on how to go about implementing the software prototype. That the game should have calm music, sounds and nice graphics. This will maybe attract more people to the game and make them to keep on coming back to play the game. Also he recommended that it would be nice to have a challenge once in a month, which is lasting for some hours. In this challenge people need to leave their point of view and answer a lot of question. After this the people rate other people question and points of view, by doing that they will get a lot of points. The winner of the challenge will get reward for everybody to see that they won the challenge of the month.

In conclusion what were learnt from the second play testing / second iteration user testing is that the game design solution achieved the goal of enabling the user to understand an argument from another point of view. Also what were learnt from this user study is that the prototype design is pretty ok and there is no need to develop the physical prototype anymore.

What did not work on the design solution is that the game was unable to influence the mind of "play tester B" immediately after the game. But the design enables "play tester B" to still understand an argument from another perspective.

More tests were done with similar test structure and questions to investigate if the design has the tendency to enable the player to understand an argument from different point of view and influence the mind of some users concerning a given issue.

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Play testing session of "Play tester C"

"Play tester C" is a regular game player. The type of game that "Play tester C" likes to play is board game and Poker. The reason why "Play tester C" plays games is because he thinks games are interesting and it sometimes required a lot of strategy to play. "Play tester C" goes to the internet and search for game to play. The different between "Play tester B" and "Play tester C" is that "play tester B" is more of an active game player, that play games on a daily basis. Both "Play tester B" and "Play tester C" consider the idea of spinning wheel game very interesting and innovative, the similarity that both of them shared.

Result from the play testing session/Users Studies with Play tester C

After "Play tester C" has finished playing the game the facilitator decided to ask him some questions about his experience on the game. The feedback received from him are as followed:

The first question that was asked to "Play tester C" is what he think about the game? He responded that the game is interesting and has a good concept. The second question that was asked to him was if he was able to learn about the game quickly? He responded with yes that he was able to learn and understand how the game works quickly. In addiction he was asked if he will come and play the game regularly. The reason for asking him this question is to find out if the game is interesting to him. He responded with yes, that the idea of the game is interesting and he will keep on playing the game in a regular basis to know other people point of view. "Play tester C" said that for him personally the points he gets by playing the game is not the most important for him. That what was most important for him is that he is able to understand an argument from another point of view. That the motivation for him to keep on playing the game is more of an intrinsic motivation and inner feeling will be his reward.

Furthermore, when asked how he will explain the game to other people. He responded that he will explain the game to other people that the game is like a word game that people go and play to know other people's point of view. Also he said that the game has a clear objective and is easy to understand. when asked about recommendation on how to improve the game. He responded that the game is pretty ok the way it is now. Nothing should be changed on the physical prototype of the game. That the development process should move on to the next stage of developing a digital prototype.

The next question that was asked to "Play tester C", is that if the game is able to enable him to understand an argument from another point of view. He responded, yes that the game provided answers for him from another point of view and enable him to understand an argument from different perspective. Finally, when asked if it is possible for the game to influence his mind concerning how he thinks about a given issue. He responded, with absolutely Yes that the game has the tendency to change his point of view on how he thinks about a given situation., after playing the game and reflecting on the answers. At the end of the play testing session "Play tester C" said that the game change his mind concerning how he thinks about a given issue.

In conclusion what was learnt form "Play tester C" is that the game design solutions were able to achieve its purpose of enabling the user to understand an argument from another point of view. Also what were learnt from him is that the game design solution has the tendency to influence the mind of the users. The reason for this statement is because he said that the game influence the way he thinks after the play testing session. This result from "Play tester C" is really fascinating. The reason why this result is fascinating is because the general thought is that it will take much longer time for the game system to be able to influence the mind of the users. But "Play tester C" provided a new insight that is possible for the game design solution to change and influence the mind of the users over a short period of time.

Play testing session of "Play tester D"

"Play tester D" is not a regular game player and she played games seldom. The games that she like playing is board games. She thinks game is fun to play and she plays games to socialize and to do something different. At the end of the play session with "Play tester D" the facilitator asked her some questions. To find out if the game design solutions achieve its main purpose of enabling the user to understand an argument from another point of view. .

Result from the play testing session/Users Studies with Play tester D

The first question that was asked to "Play tester D" is that if the game enabled her to understand an argument from another point of view. She responded with "Yes" that the game enable her to understand other people point of view. She thinks the game is interesting and fun to play. Also she said that the game provided new knowledge to her. Furthermore she said that in real life she will try to understand an argument from another point if view. Also she disagrees with answers that did not corresponded to her own point of view. Concerning the objective of the game she said that the objective of the game is clear and she understood the intension of the developer of the game and what the game is aiming to achieve.

In addiction, "Play tester D" said that she will explain the game to someone else that has not yet play it as a game you play to know other people point of view. She suggested that the game can be improved by adding more categories into the game.

In conclusion what were learnt from "Play tester D" is that the game was able to achieve its primary purpose of enabling the user to understand an argument from another point of view. Also some times users hold strongly to their point of view even when they are exposed to other people's point of view and tend not to agree with another's opinions.

Play testing session of Play tester E

"Play tester E" is a regular game player. She like playing game on social networking sites like "Facebook". Example of some of the game that she play is Candy crush saga, Farmville and Farm hero saga. She thinks playing game is fun and interesting.

Discussion about Play tester E experience after the play testing session

"Play tester E" responded after the play session that the game system provided her new knowledge on given issues. When she was asked why the game provided her new knowledge. She responded that through the answers she received from the wheel, she reflected on it and she gained new knowledge. Also she said generally the game concept is fun and interesting and that it would be more interesting when it would be integrated into social network sites, so that a lot of people can participating in it.

"Play tester E" went on to say that the game is not confusing, that it is easy to understand. Furthermore, she said that the game enable her to understand an argument from another point of view. Also the game systems have the tendency of changing her mind concerning an argument or discussion.

"Play tester E" said if she has to explain the game to someone else that has not played it before, she will explain to them that the game is like a form of word game that people go and play to get other people point of view. That you can rate other peoples answers. When asked if she will like to change anything in the prototype she responded that right now the physical prototype is pretty ok this way. That the development process should move to the digital prototype development stage.

In conclusion what was learnt from "Play tester E" is that the game where able to achieve its main purpose of enabling the user to understand an argument from another point of view. Also the game system has the tendency to influence the mind of the players.

5. Design concept

5.1. Final design concept and design implementation

This is the final and complete design concept for the Violate game.

Description of Viewlette design concept

Viewlette is a game about opinions. It capitalizes on user generated content, where the users will be the ones providing the content that is displayed on the wheel. Most questions and answers in the game would in the end be supplied by the users of the game. The purpose of the game is to display answer/point of view of other participants, to help players that have conflicting opinions and ideas to still listen to each other and understand an argument from another perspective.

The final design concept in the Viewlette game takes the form of a spinning wheel that displays answer / point of view on a particular question.

The picture of the spinning wheel

The answer/point of view that is displayed on the wheel will be selected randomly from different users in the game.

5.1.1. The Viewlette game

The Viewlette game is designed to be integrated into social network sites ("Facebook Game").

Design implementation on the game

When a participant log into the game he or she has different option.

1.   To answer the question of the day

By answering the question of the day the player will get points and at the same time be able to give their point of view on a given topic.

2.   Spin the wheel

For participant to start spinning the wheel on the Viewlette game, it is required for the player to give its point of view / answer the question of the day. Without answering the question of the day the player is not allowed to spin the wheel. The reason for this action is because this is a user generated game and the users supple the answers that will be displaying on the wheel. By asking the player to answer the question of the day, the Viewlette game will be able to get more answers and opinions of other candidate to display on the wheel of the game.

When the answer is presented to the player (Participant) He/She has the option to rate the answer with either agrees or disagrees. Also there is an option beside the answer where participant can report abuse on the wheel. The administrator will have the opportunity of reviewing the answer and remove it from the wheel.

3. Participants have the chance to get their question be displayed as the question of the day on the Viewlette game. For the player to have the likelihood for his or her question to be displayed as the question of the day, the user need to rate other people question and answer. The question that receives the highest rating will have the likelihood to appear as the question of the day. That means on the Viewlette game the question of the day will be determined by the players of the Viewlette game.

Furthermore, this option was not tested during the play testing session. The reason why this option was not tested during the play testing session is that the play session is more of a qualitative study. To be able to carry out these testing options of user generated content, it will be required to use quantitative method. The reason for not using quantitative method for testing the user generated content is because the Viewlette game is still in the physical prototyping stage. In future research on the Viewlette game both quantitative and qualitative studies will be conducted. When the Viewlette game is fully implemented into social network sites it will enable it to be tested in an ecological environment.

4. by clicking on the drop down menu on the site of the Viewlette game participant will be directed to another page that has different questions supply by other players. Participant will rate different questions up and down, and the question that has the highest rating will have the likelihood to appear as the question of the day. Also participants can submit their own question to be considered as question of the day. But this is determined by other users in the Viewlette game. It depends on the rating that questions receive from other players to have the likelihood for that particular users question to be displayed as the question of the day.

5.1.2. Social Interaction within Viewlette game

Participant has the option on the Viewlette game to show their score/achievement in the game to other friends on their network by clicking on share point on their wall.

The score in Viewlette game is important within the game. The reason is that scores its used by the players to create question within the Viewlette game. The reason of using points as a reward system within Viewlette game is to motivate players to be more engaging within the game. Also score is used as an achievement in the Viewlette game because it can be used for getting a lot of answers to question within the game. Furthermore, the players also have the option of inviting more people into the game by sending an invitation to other friends.

5.1.3. Reward system within Viewlette game

The reward system within Viewlette game is a point based system. Participants acquire points within the game by rating other player's point of view on the game, rating questions of other participants, and inviting other participants and spinning the wheels. The points in the Viewlette game can be used up to create questions within the Viewlette game. The likelihood for a question from a particular participant to appear as the question of the day is determined by other users on the game. Also, it depend on the rating receive on that question. The more active a participant is on the game the more points he/she can achieve. So it depends on how the participant plays the game to achieve more points.

Furthermore, the participant that is having the most points (that is the board leader), will have reward in the form of a virtual "cup icon" to show to other people that he/she knows.

In conclusion of the reward system, the aim of the Viewlette game is to provide an intrinsic reward to the player on the long run. The reward the player will get in the game is more of an inner achievement. By knowing that its own point of view is not always right and be able to understand an argument from another point of view.

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5.1.3. Rule in the Viewlette game

The full interface of the game consists of the following functions:
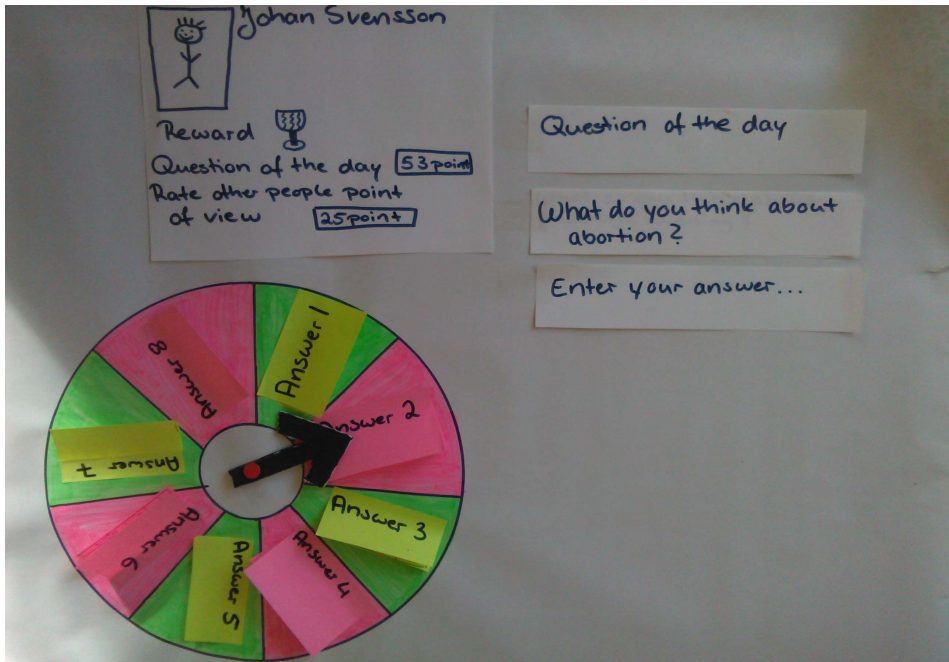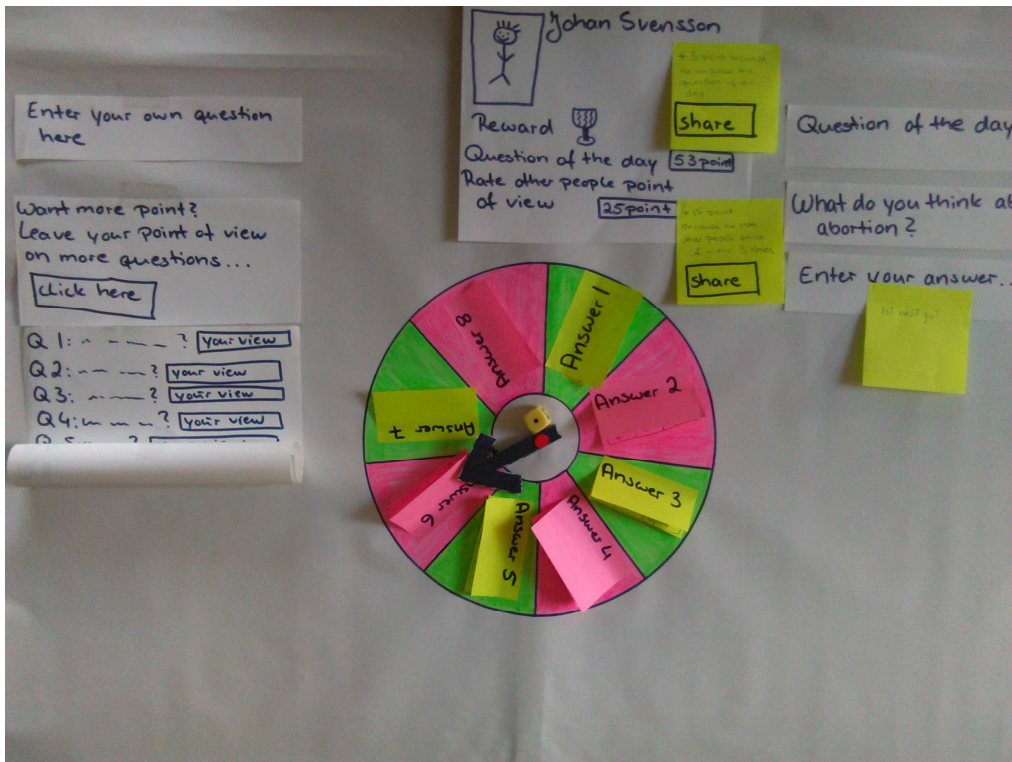

The spinning wheel displaying different answers and showing the question of the day

Player spinning the wheel in the game   *Player reading answers from the wheel and rating it*

Final design concept displaying different part on the spinning wheel game

Participants are only allowed to spin the wheel maximum of 5 times in every 3 hours. It is required for participants to spin wheel and rate answers display on the wheel to get points. Note that if participants spin the wheel without rating the answers, participants are not getting any point and they cannot continue to spin the wheel. Furthermore, participants can use their points to get more spin within the Viewlette game if they wish to get more answers. The reason why the participants are only allowed to spin the wheel maximum of 5 times in every 3 hours is for the players to reflect on answers display on the wheel.

Also abusing comment when reported will be removed by the administrator and the profile of the user might be blocked from the game.

The backend of the game will work in such a way that it selects answers /point of view from different users in the game that have conflicting ideas on a given topic. The selection of answers and point of view will be done randomly. It will enable the players to get answers from users that is outside their own "Echo chamber" and "Filter bubbles" by displaying point of view from people that don't have the same point of view like them.

5.2. Evaluation

A total of five play testing sessions were done during the design process. At the end of each of them, the play testers were asked about their experience during the game.

5.2.1. Was this a playable game?

That is one of the main reasons why the play testing sessions were conducted to find out if this is a playable game. Through play testing session the designer was able to put the play tester in the center of the design process to really find out if this is a playable game. From the result and feedback received from all the play testers it could be concluded that the game concept is a playable game

From the observation during the play testing session, the play testers started playing the game by answering the question of the day on a post-note and stick the answer beside the question of the day. After that the play tester started spinning the wheel on the Viewlette game by throwing the dice. In a scenario a player throw the dice and got number 4. The player moved the arrow on the spinning wheel to number 4 and opens the answer. After reading the answer and reflect on it, the player rated the answer with either agree or disagree. By rating the answer the player get some points. The images bellow shows these actions

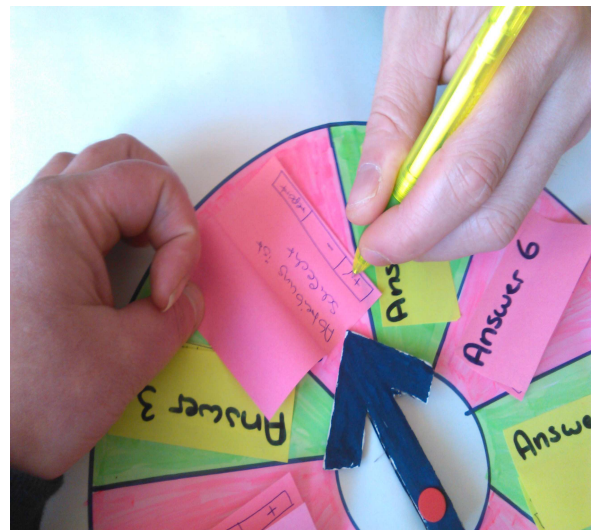*Image of the play tester interacting with the prototype*

Image of the play tester rating answers on the wheel

Furthermore, the facilitator observed that the players where not confused in the game. During the play testing session all of the 5 play testers were asked if the game is confusing they all responded that the game is not confusing at all. Also the play testers did not try out all the function on the prototype. The function that they did not try out is the crowd sourcing of answers and questions that were envisioned. Another functionality that the play tester did not try out is the function of share point/achievement with other friends on their network. The functionality of friend's invitation in the game was not try out by the participant. Apart from those functions all other functions were tested in the Viewlette game, from spinning the wheel to answering the questions of the day and rating answer.

In addiction all functions on the Viewlette game was not possible to test. For example how motivated will the players be willing to contribute to the game. This was not possible to test because of the nature of the physical prototype. The function of crowd sourcing of the question of the day and answers, the quality of the content added by the players on the game, and friends invitation and share achievement function were not possible to test on the physical prototype. The reason while all these functions were not tested is because of the limitation of the physical prototype. To be able to test all these functions on the Viewlette game, the game needs to be fully developed into digital prototype and be integrated in to the ecological environment.

Furthermore, with all the feedback and responses received from the five play tester's it could be concluded that the Viewlette game is a playable game

5.2.2. Did the game achieve its serious purpose?

A total of five play testing sessions were conducted to find out if the Viewlette game were able to achieve its serious purpose. The first play testing sessions were performed with the first sketch prototype and it was tested with just one participant because the design was roughly sketch. While the second design sketch prototypes was used to carried out four play testing session.

All of the five play testing sessions were qualitative studies, but the studies had different purposes. The purpose of the first user studies were to investigate if the concept was understandable to the user and if there were some specific problems associated with the concept idea of the Viewlette game. While the purpose of the remaining four (4) users studies that were conducted with the second prototype was to find out if the Viewlette game were able to achieve its goals. That is enabling players to understand an argument from another perspective and if the game is fun and interesting to play. The play testing session consist of three phrases:

1. A play testing session,

2. Result from the play testing session.

3. Discussion about the play testing session.

All of the play testing sessions followed similar processes, test script was used to organize the testing session and asked the play testers questions about their experience on the game.

In summary all of the five (5) participants that took part in the user studies responded that the game enables them to understand an argument from another perspective. For example Play tester A said," that the game object is clear and it enable her to know what other thinks", while Play tester B said," that the game provided new knowledge to him and he now understand how different people think about an issue", Play tester C said, "that the game enable him to understand what people thinks and make him to change his mind on a given issue". Both play tester D and E responded "that the Viewlette game provided a way for them to understand an argument from another perspective."

So in summary with the feedback and the analysis of different answers provided by the play tester's it could be concluded that the Viewlette game achieved its serious purpose of enabling players to understand an argument from another perspective.

In a scenario during the play testing session of "Play tester C" the question of the day on the Viewlette game was "What do you think about abortion". The answer that was provided by him is that "abortion is bad". At the end of the play testing session the facilitator asked the same question to find out if the Viewlette game has influences his thinking. He responded that "Abortion is not bad. That it depends on the circumstances of the lady during the time of pregnancy." When asked why he changed his answer from the answer he gave from the beginning, he responded that the Viewlette game changed its thought about "abortion". Also the Viewlette game enables him to understand the argument from another perspective.

5.3. Analysis

The aim of this thesis is to suggest a design solution for social media that may counter the echo chamber and filter bubble effect created by social media and information retrieval technology. The main purpose of this research is helping people with conflicting opinions and ideas to still listen to each other's point of view and understand the argument from another perspective.

Compared to other design solution on countering/combating the effect of filter bubbles and echo chamber on social network site, the Viewlette game tend to motivate the players to understand an argument from another perspective. What would be needed for Viewlette design solution to achieve the purpose of countering the effect of filter bubbles and enabling people to understand an argument from another perspective is that first of all the Viewlette design solution need to be develop into digital prototype.

All functionality needs to be tested during the development phases. Also both qualitative and quantitative studies should be carried out to investigate if people are willing to contribute to the services of the game and also if the users provide quality content in the Viewlette game.

The reason why Viewlette design solution is good for the purpose of enabling people to understand an argument from another perspective is that the Viewlette game tends to engage and motivate players on the game system to understand an argument from another perspective. The design solution achieved this goal by adding some playful layers in the design solution as a means to tap into the intrinsic motivation of the player of the Viewlette game.

Furthermore, what is good about the Viewlette design solution is the spinning wheel effect. The reason is that the spinning wheel design solution may have the tendency to not only counter the effect of "Echo chamber" and "Filter bubble" on social network site. Also the Viewlette game was able to suggest a design solution to enable people with conflicting point of view and ideas to still listen to each other opinion and understand an argument from another perspective.

The design solution achieved this aim by providing different answer from different players that have different points of view. When the players interact with the game system and read answer/points of view from another player and rate the point of view in the game. Automatically the player is able to listening to someone else point of view and have time to reflect upon the point of view of other players in the game.

What is not good about this particular design solution of the Viewlette game is that there is no guarantee to really know if players are willing to contribute to the service on the game because its is a user generated game. If the user did not contribute to the game the game will not be able to function properly.

Concerning the first iteration what were learnt that was good in the design solution is that the objective and purpose of the game were clear and understandable. The users found the design solution very innovative and interesting idea. Furthermore, what needed to be improved in the first iteration was that the prototype needs to be improved and the design solution needs to have a clear rule on the reward system in the game. These feedbacks were taken into consideration in the next iteration.

Concerning the second iteration it was learnt that the Viewlette game enables the users to understand an argument from another point of view. Also the Viewlette game has the tendency to influence the mind of the users concerning an argument by exposing the users to other point of view and opinions.

In addition, what were learnt about the use of gamification for the purpose of enabling people to understand an argument from another perspective is that, gamification can motivate and drive participants to change their behaviors concerning how they thinks about some certain issue. Also what were learnt from the use of gamification for this purpose is that, it enables the designer to design game system that has the tendency to tap into the intrinsic motivation of the players. Generally gamification can be useed to motivate people in either in the short term change or in the long term change. To motivate people in the short term the common method to use is the allocation of points as means to motivate players behaviors within the game context. To motivate people in the long term change, the gamification system need to be designed to engage players in an authentic manner directly with real-world setting. For example in the case of the Viewlette game, the player can apply the same knowledge on the game to listen to other people point of view and understand an argument from another perspective in a real life certain. When dealing with dispute and conflict resolution among people.

Finally, what were learnt about the use of gamification for this purpose is that it provided an innovative solution to some design problem.

The disadvantage of using gamification approach is that it could be used as a means to enable exploitation and control the behavior of the user to make profit for a particular brand like in the case of marketing and advertisement. While the advantage of gamification approach is that it can be used to make boring stuff more interesting and fun. Like in the case of Code school, that makes use of gamification approach to teach programming (Code school, 2012).

Also gamification can be used to drive participation of individual. It can be used to motivate and persuade people to change their behavior both in the short run and long run.

The next step in this research in general, will be the implementation of the digital prototype of the Viewlette game and conducting both quantitative and qualitative studies.

6. Conclusions

This thesis aim is to suggest design solution for social network site that may counter the effect of "Echo chamber" and "Filter bubble" created by technology. To counter this effect this thesis proposed a gamification concept that aim with the purpose of helping people with conflicting opinions and ideas to still listen to each other points of view and understand an argument from another point of view.

The aim of this thesis is to suggest design solution for social network site that may counter the effect of "Filter bubble" and "Echo chamber" created by technology and to investigate if the game design concept is able to enable the player to understand an argument from another perspective.

From the result of different play-testing sessions, it can be concluded that the suggested design solution of the Viewlette game may have the tendency to counter the effect of "Filter Bubble "on social network site, by enabling people that has conflicting points of view to understand an argument from another perspective.

What is good about the Viewlette game design is the way it counters the effect of "Filter bubble" in the design by matching people that has conflicting point of view together. This is done with the random effect on the wheel. Another good part on the Viewlette game is that the design is able to motivate and engage the player in the game to know other people's point of view. In addiction on what is good about the game design is that the players get other people point of view and the Viewlette game design makes the user to reflect about their own point of view and maybe change it. Also the Viewlette game enables the player to learn how to think in a holistic perspective instead of just seeing/knowing his/her own point of view.

What was not good about the design solution of the Viewlette game is that the designer can not really determine if people are motivated to contribute to the services of the game. Also all functionality of the prototype was not tested on the physical prototype. Examples of the functionality that was not tested during the play testing session was the crowd scoring of questions and answers in the Viewlette game. This option was envisioned but it was not tested. The reason why it was no tested is because of the nature of the physical prototype. It requires a lot of participants to rate the questions and answers on the game to fully carry out the testing of this sections. The testing needs to be in the form of quantitative studies.

To continue this project a digital prototype need to be created and all the functionality need to be tested through play testing method. Also both quantitative and qualitative studies will to be conducted to fully test all the functionality on the Viewlette game. Therefore, the next step of this project will be the implementation of the digital version of the Viewlette game.

The reason I am able to achieve this aim in the design solution is because of the application of gamification method and play-testing method that were applied during the development phases. Through gamification concept it was possible to apply some playful or gameful layers into the design solution as means to get the player engaged and motivated within the game context. These were done by transferring some playful attribute of game into the design solution of the Viewlette game.

The advantages of using play testing and gamification enable the designer of the Viewlette game to always have the players at the heart of the game development process and game design. By applying play testing method the designer were able to involve the players in every phases of the design. Through these methods the designer was able to design game system that engaged the players and met the player's expectation.

In addiction the advantages of using gamification for this purpose was to motivate player's to understand an argument from another perspective. Compare with previous design solution that counter the effect of "Echo chamber" and "Filter bubbles" these design solutions lack any means of motivation for people to use the system.

Other advantages of gamification and play testing are that it can be used to persuade people to understand an argument from different point of view. Through the implementation of some playful layers on the Viewlette game, in comparison to previous system lack means of any form of persuasion for the users of the system. Furthermore gamification and the play testing help to drive participant within a context. For example in the Viewlette game the players are motivated to play the Viewlette game to understand argument from another point of view in comparison. Previous system lack means of driving participant in the system.

Finally, through gamification and play testing it's possible to design game system that has the tendency to drive both intrinsic and extrinsic motivation. Previous system lacks such means to drive either intrinsic or extrinsic motivation of the users on the system.

In the design solution both extrinsic and intrinsic motivation were made used of within the Viewlette game. The intrinsic motivation in the game is more of curiosity of the players to find out other people's point of view. To understand an argument from another perspective, while the extrinsic motivation in the design solution is the reward of points and trophy for the players to display on their profiles for other people. These aims were achieved in the design suggestion of the Viewlette game.

One of the play tester said that his main motivation to play the game will not be about getting points, instead his main motivation is more of personal and inner feeling he can get when playing the game. In summary through the application of gamification concept in the Viewlette game the designer suggested a design solution on social network site that could counter the effect of "Echo chamber" and "Filter bubbles".

6.1. Limitations

The limitations with the design solution is the physical prototype, the reason is that when the physical prototype is fully developed into a digital form, maybe the play testing result will be different from the result gotten from the physical prototype play testing. So with this transition of the prototype from physical design solution into digital design solution it will be difficult to determine if the result from the digital play testing will be the same with the physical prototype testing when the design solution is fully implemented into social network sites.

Moreover, when the digital prototype will be integrated into social network site it will allow the prototype to be tested in an ecological valid way as part of everyday life and not in an organized user studies as in the case of physical prototype and this may lead to a different outcome in the test results between the physical prototype and the digital prototype.

Another limitation to the design solution was that it is difficult to ascertain if the Viewlette game design concept is able to change the mind of the players in the long run. The reason is that to be able to find out if the game is able to change the mind of the users in the future. It will require long time to investigate if the game can change the mind of the players after playing the game for a while. The players need to play the finish design solution of the Viewlette game for years to be able to determine if the design solution is able to change the mind of the players in the long run.

6.1. Future Research

Future research on this design solution should be focused on implementing the suggested design solution into digital design solution. The design solution should be integrated into social network site. Play testing method should be applied during the development phases. Furthermore, when implementing the design solution quantitative user studies should be carried out to get feedback from the users of the game. Maybe some usability studies should be conducted to evaluate the interface of the digital solution.

 To determine if the digital design solution will be able to achieve the long term goal of changing the user mind in the game an evaluation could be conducted when the design solution is fully implemented. When users have played the game for years this studies can be carry out through quantitative method in the form of online questionnaire to investigate if the game has achieved its long term goal. To enables users to change their mind.

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6.1. Concluding remarks

This thesis has suggested a design solution that may have the tendency to counter the effect of "filter bubble" on social network sites by enabling people that has conflicting points of view to still listen to another's point of view and understand an argument from another perspective. The design solution was able to achieve this aim by applying gamification method in the design solution of the Viewlette game.

Just imagine a world or society where all the information you get and the entire advert you see are determined by the salary you earn, the location of where you live and friends that has the same opinion like you have. Such a world will not make an individual to understand an argument from another point of view that is how exactly the current filter bubbles created by technology works. The design solution suggested in this thesis may have the tendency to counter this effect of "Filter bubble" by enabling the users to understand other point of view. Furthermore, the design solution suggested in this thesis is crucial to the society we live in, the reason is because every individual deserve the right to get an equal amount of information and it will make the world a better place if we are able to understand other people's point of view when dealing with ethical problem in our modern society.

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References List

American Press Institute. (2014). The personal news cycle: How Americans choose to get their news. http://www.americanpressinstitute.org/publications/reports/survey-research/personalnews-cycle/.

Abraham Doris-Down, Husayn Versee, Eric Gilbert (2013). Political Blend: An Application Designed to Bring People Together Based on Political Differences.

Boyd, D. M., & Ellison, N. B. (2007). Social Network Sites: Definition, History, and Scholarship. *Journal of Computer-Mediated Communication, 13*(1), 210-230. doi:10.1111/j.1083-6101.2007.00393.x

Bogost, I. (2011).*Persuasive Games*. Cambridge, MA: MIT Press.

Bunchball,(2013).What is Gamification?.Retrieved December 17, from http://www.bunchball.com/gamification.

Deterding S, Dixon D, Khaled R, Nacke L (2011). From Game Design Elements to Gamefulness: Defining "Gamification". In: Lugmayr A, Franssila H, Safran C, Hammouda I (eds) Proceedings of the 15th International Academic Mind TrekConference: Envisioning Future Media Environments. ACM, New York, pp 9–15

DiFonzo, N. (2011, April 22). The Echo-Chamber Effect. Retrieved September 5, 2016, from http://www.nytimes.com

Deci, E. L., & Ryan, R. M. (2004). *Handbook of self-determination research*. Rochester, NY: University of Rochester Press.

Fullerton, T., Swain, C., & Hoffman, S. (2008). *Game design workshop: A playcentric approach to creating innovative games*. Amsterdam: Elsevier Morgan Kaufmann.

Fuchs, M., Fizek, S., Ruffino, P., & Schrape, N. (2014). *Rethinking gamification*. Lüneburg, Germany: Meson press by Hybrid Publishing Lab.

Frayling, C. (1993). *Research in Art and Design*. London: Royal College of Art.

Munson, S. A., Lee, S. Y., & Resnick, P. (2013). Encouraging reading of diverse political viewpoints with a browser widget. In International conference on weblogs and social media (ICWSM),Boston.

Nagulendra, S., & Vassileva, J. (2014). Understanding and controlling the filter bubble through interactive

    visualization: A user study.

Nicholson, S. (2012). A User-Centered Theoretical Framework for Meaningful Gamification. Retrieved March 27, 2014,

    from http://scottnicholson.com/pubs/meaningfulframework.pdf

Pariser, E. (2011). The filter bubble: What the Internet is hiding from you. New York: Penguin Press.

Twain, M. (2009). How to make History Dates Stick. Retrieved March 31, 2014, from

    http://www.gutenberg.org/files/70/70-h/70-h.htm#link2H_4_0005

Xing, X., Meng, W., & Doozan, D. (2014). Exposing inconsistent web search results with bobble. In PAM 2014

Zimmerman, J., Forlizzi, J., & Evenson, S. (2007).Research through design as a method for interaction design research in

    HCI. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems - CHI '07*.

    doi:10.1145/1240624.1240704

(2012, March 01). Retrieved August 15, 2016, from https://www.codeschool.com

Appendices

Appendix A

Test Script

Steps 1: Introduction. (2-3 minutes)

At this stage I introduce the game to the playtester and I tried not to say so much about the game and allow the play tester to explore the game alone. Also, I made it clear to the playtester that I am not testing her but I am testing the prototype and explained to my play tester that the prototype is still in the development stage.

2: Warm- up discussion (5 minutes) Ask some question for example "Please tell me about some of the game you play?

- What did you think about the game?

- Where do you go to play/find out about new games? Why there?

- What was the last game you play/buy?

Step 3: Play session (15-20minutes)

At this point explain to the playtesters that they will be trying out a game that is still in the development stages

Step 4: Discussion of the game experience (15-20minute) during this stage ask question for example

- What was your thought about the game?

- What is the objective of the game?

- How would you explain the game to someone who has not play the game before? What will you tell them?

- Is it there anything you don't like about the game? If so what

- It's anything confusing? Please take me through what you found to be confusing,

Final stage: Wrap-up the session and I conclusion the play testing by thanking the play tester for participating.

Appendix B.

Test Script

Steps 1: Introduction. (2-3 minutes)

 2: Warm- up discussion (5 minutes) Ask some question for example "Please tell me about some of the game you play?

- What did you think about the game?

- Where do you go to play/find out about new games? Why there?

- What was the last game you play/buy?

Step 3: Play session (15-20minutes)

Step 4: Discussion about the game experience (15-20minute)

- What was your thought about the game?

- What is the objective of the game?

- How would you explain the game to someone who has not play the game before? What will you tell them?

- Is it there anything you don't like about the game? If so what

- It's anything confusing? Please take me through what you found to be confusing,

- Did the game influence the players' points of views concerning a given topic?

- Did the game enable the player to understand an argument from another point of views?

- If the game was interesting and fun to play?

- Did the game provide new knowledge to the players?

Final stage: Wrap-up the session and I conclusion the play testing by thanking the play tester for participating.