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Digital Game Design & Digital Image Production



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Situated Gaming:

**The story of the past,
present
and future
in women's digital game world**

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Abstract:

In this bachelor thesis we research and discuss a theme that has been the focus for many feminist figures and groups in both older and recent content where they clash together in an effort to find a solution to a problem that has been plaguing our society. The problem being; a lack in diversity inside Game development companies and creation, thus our question becomes; how can *We* include or encourage more women to enter the digital world and participate in programming and game making. The methods that has been chosen for this thesis range from Critical Design: to design and create a unique game of our own, Interviews: to question women from different backgrounds and ages to find out what they want/wish for regarding games, to Kanban: where we use it to get our project together. All while linking this entire thesis to Situated Knowledge concept where we dive in deeper to what it means in the discussion part and how in our results we discoverer a way that we individually can use to change the gaming industry and its involvement.

Key Words: Situated Knowledge, feminism, diversity, equality, game, design, programming, community, time-line.

Abstrakt:

I det här kandidatarbetet undersökes det ett problem som har varit i centrum för många feministiska figurer och grupper. Det finns både äldre och aktuell information som informerar om att man har försökt i flera år att hitta en lösning till; vilket är brist på mångfald inom spelutvecklings företag och skapandet, särskild när det gäller kvinnor. Då vår fråga blev; hur kan vi inkludera eller uppmuntra fler kvinnor att komma in i den digitala världen och delta i programmering samt spelframställning. Metoderna som har valts för denna avhandling sträcker sig från Critical Design: Att utforma och skapa ett unikt spel med hjälp av konceptet, intervjuer: Fråga kvinnor från olika bakgrunder och åldrar för att ta reda på vad de vill / önskar med avseende på spel och Kanban: där vi använder det här projektmetoden för att få vårt projekt ihop. Samtidigt kopplas hela

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arbetet till Situated-knowledge, konceptet med det är att vi fördjupar oss mer om betydelsen i diskussionsdelen och sambandet av resultat där vi upptäcker en potentiell lösning som kan användas enskild för att förändra spelbranschen.

Nyckelord: Situated-knowledge, feminism, mångfald, jämlikhet, spel, design, programmering, samhälle, tidslinje.

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Writing process:

The writing process went as following: we started by researching and gathering many materials which then we discussed and compared by how well they are and/or if they are trustworthy depending on how compatible these studies are with our theme. After that we divided the studies and research that we found by two, which means, each student took half the amount of papers we found which then went on to reading, taking notes, writing summaries and analyzing them. Afterwards we would gather all the material together and discuss how well they sit together and in which order. So, to recap, this project was written by two people 50/50 the amount of research for each person.

1. Background:

Between Rhizomatic, Critical thinking, Diffraction and many other philosophies; Situated knowledge has always been a one of a kind concept that needed much more attention. Thus, we have decided that it was time to explore this concept that we've learned but haven't had the chance yet to discover thoroughly and especially the feminism perspective on current problematic issues. Situated Knowledge is a concept that questions researcher's studies on many levels mostly on how accurate and truthful they are when it comes to representing a neutral none biased conclusion on a specific scientific study.

The concept of situated knowledge brings attention to the fact that our possibility to gain knowledge about reality is limited by what it is to be human. Researchers can never be completely neutral. However, their objectivity can be strengthened by making them – as well as their social and cultural understandings – visible in the research process. (Swedish Secretariat for Gender Research, 2016)

Most of these studies, however that are being conducted are influenced by culture, class, society and many more elements that makes them almost always not as objective as they should be which in return makes them harder to be gender neutral. (Swedish Secretariat for Gender Research, 2016)

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The issue we decided to tackle was nothing new or unheard of which what makes it rather unsettling and raises questions more than answers; researching and understanding why there are difficulties when it comes to women in a digital game industry, was our main focus and start point of this study. The reason behind that is, the mutual interest we both as students and females have regarding this issue.

Since the start of our college days in BTH: University; we've learned about feminist groups and the difficulties they encounter in the outside world, how situations that accrues effects the outcome and why. How society views these issues and what purpose are they trying to achieve. The digital game industry and development has been the highlight for many years regarding diversity and equality, feminist groups have tackled this issue in recent years putting more pressure and focus on this subject through research and campaigns that explores the roots reasoning behind the lack of people of color and especially women in this line of work and why it is remaining a white-male dominant domain. People are very much aware of this issue and some suggest solutions to this problem and we say it is a problem because of the speed that the gaming industry is growing in and the people who are guiding the youngsters into this line of work are giving a one-sided impression. Many articles, reviews plus interviews have been conducted that explains the issue in detail but one in particular, that was conducted mostly around the UK, suggests that if you are to see yourself unrepresented in a situation or work force you are most likely not to partake in it (The Guardian, 2017). Depending on where you live and which part of the world we look at the numbers shift and changes, but they are never in the favor of anyone else but the white-male of a middle class. But the roots of this problem grow much deeper, the issue is within society itself and how we are being raised and in which way depending on what culture / background we come from.

“Only 19.6% of girls-only schools offered computing, falling to 9.3% at A-level. In contrast, 31.6% of boys-only and 29% of mixed schools offered computing at GCSE rising to 43.7% and 24.5% at A-level. This is before students even make their subject

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choices, limiting access for girls straight away. One in five of all students studying Stem at UK universities in 2012/13 was from a British BAME background, so representation is high at degree level. However the gender imbalance is stark, with 82% of the computer science cohort being male and only 18% women.” (The Guardian, 2017)

This not to say the problem remains untouched, the numbers are growing in favor of women and people of color, however the growth of the industry itself is far exceeding those numbers and making them, more or less, insignificant. According to a study published by the International Game Developers Association (2014), only 22% of the practitioners in the game industry are female. The Entertainment Software Association said that the number of female players and male almost flat. This difference can be attributed to a number of factors: girls are not encouraged to invest in game industry, as the statistics show in the text above that there are not many young females studying science, technology, engineering and math (or STEM for short) and gender discrimination. The Gamergate controversy underscored this issue, in which a female game developers were hacked online for their open opposition to sex discrimination in game industry which let a fire in recent years and started exposing this issue even further.

“The subject of gender-based discrimination, intimidation, and abuse in digital games culture has gained unprecedented mainstream public visibility with the #GamerGate campaign against those who purportedly engage in unethical behaviour within games journalism. Since August 2014, comments in a range of social media platforms, including Twitter, 4chan, Reddit and YouTube, have expressed rage against the intrusion of feminism and political critique into the domain of digital games” (Chess and Shaw, 2015).

This is the most sensational game gossip in the United States during 2014. This can even be described as a war between gamers and game media, discussing media corruption, gender discrimination in the gaming industry and abuse of feminism. As events evolved, the problem became bigger and bigger, involving all aspects of the game industry. Many developers and media people support a healthier more open culture game environment for

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females. The threat however did not stop but spread even further to other female practitioners, a devastating impact on the women's gaming industry and other marginalized people that women are still in a dilemma in the gaming industry.

We associate our research with situated knowledge, that is, knowledge specific to a particular situation which according to Donna Haraway, the creator of this concept, all information available are limited due to us being only but human. (Haraway, 1998) The concept offers a more adequate, richer and a better understanding of the issues we are researching and most importantly a reflexive relation to our own as well as others. What inspired us from Situated Knowledge is the emphasis on time in which situations changes the outcome of research; based on that theory, we set a time line in which we gathered as many information as possible surrounding this issue to experience the change that time brought us in each of these academic researches.

In our research process, due to touch on gender discrimination, inequality and some large-scale discussions triggered by news and other media events in the industry about feminism, we have seen some radical speeches and malignant consequences caused by related events (as the #Gamergate mentioned above). We choose to follow the academic concept of situated knowledge to not only minimize our subjective view, but to understand each research we are studying based on the time it was conducted in and the situation which resulted in the outcome it is providing. Thus, help us to improve the accuracy of our research in a more objective way; help us better understand and analyze potential problems in our research topics, for example: possible causes of gender imbalance and the possible underlying sexism behind this issue of diverse rolls in the gaming industry. We do not want to have serious biases or unsuitable evaluations with personal emotions in the analysis of this series of questions. But we do believe that the viewpoints of people have changed with time, situations and other factors that rolls over the situation itself. (Situated Knowledges - Critical Social Psychology (5/30), 2011)

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In this thesis we will try to, first and foremost, understand why this imbalance exists in today's society from different point of views whether it's from a female gamer, developer or scientific articles and analysis. Furthermore, aiming to find an answer even if hypothetically.

1.1 Research Question:

How can we change or expand game development to include more women?

1.2 Aim:

The purpose with this bachelor thesis is: we want to research and understand women's perspective when it comes to game development and industry; how the discrimination is being handled and how it is affecting them as women in work places and as developers. The reason behind this research lies within our main interest as female students who are very passionate when it comes to game design and development and desires in the future to contribute to this branch by working with game companies and making a better future for women in this line. Through our research we wish to understand the controversy behind the situation and reason of why females prefer other work forces than game-themed businesses and to present different possibilities as solutions. To be able to present and commit to this cause we had to dive in deep through many historical articles, books, reviews and interviews to grasp the situation at hand.

We hope that during our academic research and game creation that some answers can be found and the most important being; how can women start their work in the game industry and stand on their own and what lies behind the lack of diversity in this industry. That way, it is also a good opportunity for us to think about how can we find suitable jobs in the game industry and personal career plans after graduation.

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Our conformation will be in a form of a game that is entirely depended on the feedback from the interviews conducted with girls to determine what *they* think is desirable and affective game to play plus enjoy.

2. Previous and current research:

2.0 Introduction

In this part of the thesis, a number of different articles, studies and books will be presented to support the theme and purpose of this paper. Studies from well-known researchers in the gaming world businesses such as Dr. Alison Harvey, Stephanie Fisher, Brie Code and many more feminist figures in this industry that have dedicated themselves to analyze and understand the controversy behind the lack of diversity. Our research starts with a some-what old book from the 1998 in title *From Barbie to Mortal Kombat* by Justine Cassell and Henry Jenkins, both of which are professors whom are interested in research such as human-computer communication, storytelling and journalism. We then branch off to very current events that happened just less than a year ago in 2017 in studies such as *Growing pains: feminisms and intergenerationality in digital games* (2016) and *When passion isn't enough: Gender, affect and credibility in digital games design*. (2017) by Alison Harvey and Tamara Shepherd and many more articles. From there on out we take those studies and find a coherent conclusion that binds them all together all while keeping *Situated knowledge* in mind as our main base to further analyses how accurate these studies are while also keeping the time line in mind.

2.1 Starting with the past

The past holds many important facts and red threads that tangles us to the present and even the future, that is why we have decided to start with somewhat old material as research base which in return lays a time-line for us to work with and see through it

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changes depended on the situation. That way we will also understand and appreciate how far we've come; if anything, have changed to the better or worse, in most cases however, it is the previous.

To start off by exploring a book by Justine Cassell and Henry Jenkins from Barbie to Mortal Kombat (1998). The book studies older research material and even “current” studies to represent situations where girls are just as interested in video games and computers as boys. The book starts off by giving multiple options to approach girls in playing environment or giving them knowledge in things that they might not like such as chess, in an old TV-commercial a situation was presented where a product called “Chess for Girls” is now the solution to make girls like chess! by changing the colors and making the chess pieces into doll-like figurines, the book discuss the pros and cons when it comes to commercials such as this one and how it is actually effecting not only the young minds but parents and the way society viewing girls as well. The authors move on briefly to talking about digital games and in which way can we encourage them to take part in this media. Is it better to change the game and make it “girly”? Or is it best to teach them through parents.? Or make companies to pursuit them, or maybe listen to what the girls want and seeking what they prefer in these games?

That's when the Chess for Girls idea comes back again and argues if its really such a bad idea to include girls in the computer world through colors and dolly like themes. But during that time this was just a speck of issue in a sea of deep problematic issues.

“Some question whether it is possible to fully reconcile the political goal with the economic one. Some argue that the core assumptions of the girls game movement involve a “commodification of gender” that will necessarily work against any attempts to transform or rethink gender assumptions within American culture” (Cassell & Jenkins 1998)

To many this may seem as a negative remark, that feminist groups are having many backlashes since the start of “girl games” movement, but the way the authors of the book

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sees it as a start to stir things around and making a name to those who are fighting for equality and better future for girls by including them in the real world and its many problems. In the book later on the writers explains what it means to have equity and equality and the difference between the two concepts. Equity: to be able to access the same education and work rights for both genders, and equality to access same kind of games. Since back in that time the games that were made for computers were mostly aimed (owned) for boys, boys and girls act differently and like different things – however the concept and difference is all cultural and socially constructed. But change is happening and that gender is no longer a way to describe things clearly anymore. During that time, it was also marked that females as characters in games were limited if none existing at all, they existed only if they were non-human creatures. The problem in the late 1980s was how females were portrayed in games, just the usual damsel needing rescue, but what type of games would girls prefer to play?

“A study of the cover art of video games turned up similar findings: in looking at forty-seven video games currently on the market, Provenzo (1991) discovered that representations of men outnumbered representations of women by a ratio of thirteen to one (115 male, 9 female) and that twenty men were depicted in “dominant poses,” while no women adopted similar postures” (Cassell & Jenkins 1998)

It was all about marketing and profit, when one game decided to risk and include a female protagonist that the player can chose from and it didn't backlash or make them lose any male audience, other companies and games started to pick up on that passe and include more females in their games. And that was from Sierra On.Line co-founder Roberta Williams, one of the first women in the computers filed. By 1989 she started adding more female protagonist into her games “King's Quest” series. Then they started to take more feedback from players to make games better. Meanwhile games that were targeted to girls were no success such as “Barbie fashion” and other kits. But now they had to make sure games were appropriate to the young minds.

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“However, a more recent study by Christine Ward Gailey found that characters continued to be constructed according to a fairly traditional set of gender stereotypes, including the portrayal of good but passive princesses as objects which motivate the action, and bad, eroticized women as competitors who must be beaten back by the protagonist” (Cassell & Jenkins 1998)

As expected there is always a drawback to these violent games and woman as the head roll or as the main “bad guy”. Games were now implying that women should be treated with violence just like men on the streets. Not to mention that most of these female’s characters were constructed to specifically attracts even more male audience and to be exact, teenagers. Even though there were now more games with females in them the most popular choice was still the violent games with less accepting to women in them, this time the researches and feminist turn to parents and ask if they want to change this behavior in helping their young boys understand the consequences of these games and to include more girls as gamers in this time. As for the cultural power and impact on boys and girls. They try to link the fact that it is not by a chance that the gaming and computers game industry mostly male dominate and that mostly men that buys the games. Before it was more of a competition to get your hands on a computer, some didn't have it at home which left the girls to compete with boys at school to try the computer games which they weren't interested in doing. Girls do like the computer but they don't like the fuss the boys created. The developers in these studies link boys and computers through gaming, while they link girls to teaching tools and other knowledge based programs.

“In sum, although boys and girls can be equally skilled at using computers and computer games, boys are more likely than girls to choose to play with them, and children of both sexes consider both computers and computer games to be boys’ toys. The fact that more boys play computer games means that more games are targeted toward boys. As a spokesperson for Nintendo said, “Boys are the market. Nintendo has always taken their core consumers very seriously. As girls get into that core group, we will look for ways to meet their needs”/.../ And the fact that more boys play computer games leads to more men in computer-related fields, fields that are growing in scope and importance every day. The problem becomes compounded as more and more fields (commerce, science,

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journalism, law, etc.) are becoming heavily dependent upon computers.” (Cassell & Jenkins 1998)

Stereotypes about games clothes and growing up. What do girls really want from technologies? The developers still try to find the answer. The women in these independent companies tries to make a difference in these gabs between male and females but its just not that easy. The real challenge is to get girls who never been interested in video games to play them. The reason behind that is the fact that to expand game development and open it to everyone one must start as a fan or a consumer before contributing to such branch. The authors keep mentioning colors and “prettier” graphics to encourage the girls to play, the color pink keeps on pooping up focusing on the “traditional girl interest”. A way to reach them is to understand what they found attractive and interesting in the things they already like such as Barbie, My Little Pony and other things. To make and create something that would hit their interest. So, they took Barbie as a role model and gave her a contest, a background and a purpose. Even Disney started changing its view regarding its princesses’ stories and started to include more powerful stories with none romantic motives.

“Your job is not to get married. Your job is not just to be pretty. You can have a job. You can do stuff in the world. And if you want to wear a hat and high heels while you’re doing it, you can do that, too.” (Cassell & Jenkins 1998)

Its not about slapping the pink color on random things but to include girls without the gender bases and boundaries. In conclusion of this work by Justine Cassell and Henry Jenkins they suggest that targeting games towards girls only or making up a new genre for “girls only” will not be a healthy solution to include more women in both the industry and as gamers, in this way we may risk excluding a large majority of the people and that is boys. It is important to the researchers of this book to ensure the fact that equity is one of the most important aspects to ensure that everyone can do and contribute to everything. If one markets games or an industry to a specific gender or a group of people it will backfire and go against the rest of the people, that is why feminist do not want to

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make the same mistake as companies before them and that is target the most stereotypical “girls” in this argument. As the girl's games movement still a very new subject to this research the book concludes with unfortunately no clear answer to this issue

“We haven’t found the answer yet. There is almost certainly not a single answer to the challenges surrounding gender and games, but as we broaden the range of available options, we also open up new space for a broader range of experiences and identities for both girls and boys.” (Cassell & Jenkins 1998)

2.2 The current situation

Moving now in time to more than a decade worth of research and material, we find some changes that happened across the years, but some things did not change such as the view in people's minds, whether users or practitioners, game is a man's patent; What led to such a deep-rooted concept? The reasons behind it come from various social factors, and it is undeniable that this is a longstanding problem.

Digital games as technologies of gender have been understood as multiply exclusionary of female subjects. Historically informed approaches indicate that the gender-differentiated marketing of these consumer goods and the framing of digital games as ‘toys for boys’ can be linked to the conservatism of the North American industry after its near bankruptcy in the early 1980s (Dyer-Withford and de Peuter, 2009). (Harvey & Shepherd, 2017)

At the beginning of the game development, most of the computer technologies developed at that time were run on mainframes at institutions of higher learning in the United States and the United Kingdom, such as MIT, the University of Virginia, and the University of Essex. ‘SpaceWar’ is the world's first truly interactive electronic double shooting game designed in 1962 by Steve Russell with his classmates who were Massachusetts Institute of Technology students. Players can destroy each other's spacecraft with weapons but avoid colliding planets. (Corie, 2005) In "The Golden Age of Video Games", the author spends a lot of time detailing the game development time line, whether in the early stages

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of development and in the golden age. the timeline is full of people and technology from Europe and the United States, as well as the budding of the Japanese game industry in the 1970s. (Dillon, 2014) As we know, women's social status in Japan is not based on the working environment, and they often identified by their family roles and depend on them as a daughter, wife and mother. The role of mother is particularly valued in Japanese society (Fujita, 1989; White, 1987). Throughout the history of social development, whether in Europe, the United States or Asia, women are often defined as behind men," It is a truth universally acknowledged, that a single man in possession of a good fortune must be in want of a wife. - pride and prejudice" (Austen, 1813) Such a mode of social development is undoubtedly one of the important reasons to help men become dominant in the game industry from the beginning.

When the golden age of games was mostly adopted by men (built and played), game developers need to find new directions; that's when women as players have been discovered by the game developers that would be a huge potential to market and business opportunities. Since Japanese game developer KOEI released the Angelique game in 1994, the game industry has emerged a new concept of the game direction what is called "Otome game." 'Otome' means maiden in Japanese. So basically, Otome games are visual novels that mainly targets the female audience (otome game means Maiden Game). They invite players to enjoy a story where you can live a in a virtual relationship by romancing and dating handsome men game character. (Kim, 2017)

With the continuous development of the gaming industry and the emergence of popular game types such as light games, casual games and social games. It can even be argued that women have become the dominant players in such games, especially in recent years, such games have mushroomed, but also led to female users to be doubled. The newly released of the Otome game "love and producer" on December 20, 2017. It is with an alarming number of downloads, daily capital flow and estimated monthly income have caused the South China Morning Post, WallstreetCN and other financial sites and news attention. According to Flurry, a mobile app analytics company, the number of female

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gamers of games on the iPhone's bestseller list exceeds that of male gamers. Flurry predicts that 58% of mobile gamers are women. The study found that female players spent 31% more money on purchased items than men, 42% more time on games, and retained higher retention rates on the 7th day than male players. (Mobile Gaming: Females Beat Males on Money, Time and Loyalty, 2014)

The game industry has long been dominated by a variety of direct or indirect sexist discrimination, the obvious of which is male gender discrimination against female gamers. Many men use excessively exaggerated ways to show their love or dislike for women. For example, in some cases a female player launches any game-related topic, and male players will only focus on her gender, regardless of the real theme of her topic.

Similarly, women in the digital game industry have difficulties. The Next Gen Skills Academy conducted a survey on gender balance in game industry and the findings of its research survey showed that 45% of women in the gaming industry in the United Kingdom said they had encountered barriers of gender issues during their career advancement. (Gender Balance Research & Development Programme for the Games Industry Report, 2016) For example, gaming companies are less willing to hire female employees from the beginning because of maternity leave, etc., and are more difficult to get career development, or even dismiss you for whatever reason. We learned that Brie Code (a game developer) had once had such an experience, in her words she said that she got called into the producer's office and she thought herself was being fired. Fortunately, through her own efforts that now she is a senior game designer, speaker, writer, the CEO and creative director of TRU LUV. It's a video game studio making games with people who find video games boring. Brie Code explains the original intentions for creating a games studio for people with no interest in video games. She said that people who are similar to each other think similarly, using the same knowledge base and dealing with the problem from the same perspective. There's even a further psychological effect where an individual in a group of similar people will have fewer good ideas than the same

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individual in a diverse group. Brie Code was thrilled because of one day her friend Kristina who never plays game started to ask about video games and recommended “Skyrim” to her friend. We just realized that they who do not play the game may not dislike the game, but because they do not have the opportunity to try the game or access to the game information, they do not know what the game is. And we as players and game industry-related practitioners: people could develop an emotional attachment to a character in a video game and could create their own character and exist as a version of themselves in a world full of characters whom you care about. (Code, 2016)

2.3 Female era: the game market into "her era"

In an article by T.L Taylor the author explores what traditionally seen as masculine spaces and seeks to understand the variety of reasons in which women might participate. The authors looking at the growing population of women in massive multiplayer online role-playing environments (MMORPGs) as a starting point, analyzes and acknowledges the multiple pleasures of gaming (whether male or female). From the game designer's point of view, the author analyzes the content of the game in detail, such as the multiple contexts in which gaming occurs, various social spheres, the world of EverQuest in game, create a character and the different races in game. The focus of this thesis however, is to encourage women to engage in the game industry related work but before that, we think it is also an indispensable premise that more women should be interested in games first.

A recent study by the market research firm PC Data Online placed women as surpassing men in the population of online gamers.' While the margin was quite slim (50.4 per cent), such research is beginning to give us a glimpse into an emerging community of internet users. While many of the women playing online games are involved with more traditional kinds like Hearts or Dominos, there are a growing number playing massively multiplayer online role playing games (MMORPGs). (Taylor, 2003)

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As the article claims, digital game industry is tied to the creation of sensations, emotions, feelings and passions. To develop interest in your own business is an effective way to improve career loyalty, no matter in which industry. From the designer's point of view, if you can learn more about all aspects of the user's needs in order to create a more successful game: of course, it is an essential step to understand why women play games and understand the pleasures they derive from them.

In another movement with many members such as Felicia Day, Anna Kipniss, Robin Hunicke, Kiki Wolfkill, Jane McGonigal and Colleen Macklin whom repeatedly stressed at the Game Developers Conference (GDC) for change. Hunicke said: 'Games are a medium of social connection, both in terms of players and amongst teams who make games. My aim is to push forward the kinds of games we make.' (French, 2013) Now there are many individuals, organizations and companies that are pushing for and encourage more women to join the game industry efforts.

Activities, groups, events and organizations aiming to increase the diversity of talent within this sphere of production are increasing, and one such recent initiative is the Montrealbased Pixelles. Formed in 2012, and based on the example of the successful Toronto group Dames Making Games (Harvey and Fisher, 2014), Pixelles is led by two female game developers with the mission of supporting women who 'for one reason or another have never managed to [make a game]' (Harvey & Shepherd, 2017)

Here, we have to mention another female producer, Jade Raymond. Patrice Desilets and Jade Raymond are the creative directors and the producers of the series game of Assassin's Creed in Ubisoft. Jade Raymond is a 42 years old developer, whether in the game industry or as a player, she is a very famous pusher of games. She stated that 'working in the game industry is great', she believes that all the people in the game industry are great to work with, but at the end of the first Assassin's Creed, it sorts of built to a crazy level. It sorts of exploded and that was the first time she was really exposed to the uglier side of things. How quickly people either dismissed her experience, or didn't bother to check on it before jumping to conclusions. But ultimately, Raymond

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thinks that, people who have those kinds of opinions or make that kind noise are those who are living in the anonymity of the internet. And that side of things exists in every industry. Jade Raymond as 'Sims Online' project leader, 'Assassin's Creed 1', 'Assassin's Creed 2' executive producer and was the CEO and Managing Director of Ubisoft Toronto Studio, she was undoubtedly a successful game designer. In an interview in 2013, she said that female practitioner are rare, but in their current team higher than the industry average. Female game developers can make the game content more in line with the needs of female players, to this end, she and her team will seriously consider the gender balance of men and women practitioners in the future. (Crecente, 2015)

As the main game development hub in Canada, Montreal benefits from federal policy instruments including Digital Economy projects and the Canadian Media Fund[....] have contributed to Canada's games industry's significant position among global games production (second behind the US in overall competitiveness)[....] The game development scene in Montreal, while anchored by Ubisoft and its nearly 3000 employees[...] (Harvey & Shepherd, 2017)

Sony Corporation, a well-known game company, has also launched a project similar to the game training camp to recruit young girls interested in video games or technology to participate. Sony will bring a variety of cutting-edge game knowledge training, work experience to visit, stimulate and cultivate the girls' interest in the game. Michelle Tilley, head of Sony, said there is a serious imbalance between men and women in games and technology. In the future, we should take some measures to control the gender balance. We should encourage young women to join the passionate industry of games to help them realize their dreams.

In such an example, more and more activities are being organized and more and more people are trying hard to alleviate and eliminate gender discrimination. As individuals, we also want to personally make some plans and help for our own future, which is also the main motivation for us to initially study and explore this theme. And all of the researchers and feminist figures we have encountered thus far have had the Situated

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Knowledge concept almost as if carrying it on their shoulders to have this bird like view to critically analyze and observe reality in order to find and make the change happen.

2.4 When Feminists come together

Two more names to add on this paper that have been occupied with this issue for many years to further understand and analyze it. Alison Harvey or Dr. Alison Harvey is on the Research Management Committee of the 'Refiguring Innovation in Games' project and an active participant on the Digital Games Research Association (DIGRA) Diversity Committee, right now her main focus of research “includes interviews, participant-observation, ethnography, and participatory action research on initiatives and organizations intended to get more women in various creative, media. and tech.” (University of Leicester, 2018) And Stephanie Fisher who has Research Funding Coordinator degree from the University of Toronto and has been working with organizing all regular and special events at GamePlay Space, including catering, budgeting, and is also working on the Educational Game Design. (Linked In, 2018) Both of them have worked together with feminist groups in game making and development to broaden the spectral of women in games. Two of their articles together have caught our attention and those are “Everyone Can Make Games!”: The post-feminist context of women in digital game production (2015) and Growing pains: feminisms and intergenerationality in digital games (2016).

Starting with the first article “Everyone Can Make Games!”: The post-feminist context of women in digital game production (2015) . In this article we are introduced to many new names such as WIG (Women in games) association which focuses on women that already work within this industry, how they develop and how the statics being affecting by them.

WIG International's objectives are less tangible, positioning their members as advocates for issues related to equality, diversity, and camaraderie in the game industry workforce, without defining what these nebulous terms mean or how to achieve them in digital game production. (Harvey & Shepherd, 2015)

They also mention the difference between WIG associations and incubators which focuses on females that are trying to launch their first game ever. None the less, both of these groups focus on supporting women in this line of work. But the problem this article tries to focus on is the fact that women in these two groups won't admit their project to being “feminist” in fear of backlash and anti-feminist groups rage. Now this is where the research behind Fisher's and Harvey's mirrors the first resource we've discussed here in the first section. The two researchers have done a wide verity of different backgrounds and research regarding the issue, but the main focus remains why is it still a “white, middle-class, heterosexual, technologically competent, socially isolated, and violence-oriented masculine” dominate in both as consumers and makers and that it comes of in no surprise that one follows the other. Their research also reveals that women in the gaming industry still has the lowest numbers across any other work force with only 10 percent as the highest that ever been recorded and that includes core content for creating the game such as, art, sound and programming were/still are all male dominated.

To fight all of this workforce that is mostly male dominate the DYI in game design and self-taught seemed like the only way to proceed. Many known figures are contributing in these DYI to overcome the muscularity in this industry and allowing more women to develop their skills. This was the way for feminist groups and for women in general to make their own games without the backlash. Thanks to this way of thinking it helped motivate and create Difference Engine Initiative (DEI) “*a series of women-in-games incubators in Toronto, Canada introduced in the summer of 2011.*” “the inspiration behind this project and the rise of a new engine was to shed light to those who cannot program and they would invite people to come and DYI games and to mostly represent women. The two key points that were most relevant to the DEI—were (1) the importance of diversity in the digital game industry and (2) the significance of education initiatives to encourage women to choose video game design as a career path.

On a side note the article also introduced interviews of women in different work-lines but mostly connected or in the game-themed line. In one interview they mention a certain

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female who works as a game journalist and the main reason she is being seen in her work is because she is a woman, that they call her when they need to talk about “feminism issues” and to analysis something that a woman wrote. And in her words, she says “a Female writer is not the same thing as a feminist writer” which we believe is very underrated and needs to be explained and taught to so many people. But on the other hand, she feels restricted to tell them to stop seeing her for her gender because there is a lack of females in the digital game world. On the other hand, we can't exclude the other side represented behind the WIG which is the fact that some feel that this organization is consciously avoiding and categorizing people (females) away from other groups and highlighting them only and that this experience should be shared by everyone and not a single group, which is a point that the article makes in relation to the cause of backlash or “reject” to feminist's projects.

In conclusion for this article; a shift can be seen in the digital game world making regarding feminist groups where females and feminism being linked together and can cause trouble when it comes to sending a message or reaching out. The reason behind WIG and DEI was to ensure diversity in the line of work that has been dominated by male mostly in hopes that it would eventually lead to marked-based success. Another community that has been welcoming all kind of people that are interested in digital game design is Dames Making Games (DMG)

The contradictions of post-feminism suggest a way of seeing conflicting and counter-intuitive utterances, actions, refusals, and embraces as productive and even as potentially offering us a way of talking about feminisms in the plural, across our differences and our difficulties with the term. And in this tendency towards multiplicity, hopefully, we will find not only a diversity of perspectives but also a plurality of types of action for change in an industry still plagued by conservatism and exclusionary patterns reproduced through the hegemony of play. (Harvey & Shepherd, 2015)

In conclusion of this section, we have explored articles throughout our timeline based on relevancy and accuracy to the subject at hand, we have observed that there are few to

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many ways to how one can include more women in this line of work, whether as gamers or as contributors many studies have proven that heart of this business and solution lies within ourselves to find new ways to interact and expand this line through gamers and the community before jumping to the companies of gaming and development to secure a place. We further analyze our findings and linkage to current situations and perhaps even the future in the Discussion part of this thesis.

3. Methods

In this section a number of methods will be presented and explained to ensure the connection and accuracy of this research and its confirmation which will follow shortly after. Our methods will be: Critical Design, Interview techniques and Agile/ Kanban.

3.1 Interviews

As a critical part to this research's goal which is based on the theme question, *How can we change or expand game development to include more women?* it is important to hear what the women think of the game industry itself. And to help us create a game that would spark their interest, we decided to interview many kinds of different women ranging from different backgrounds, ethnicity and ages to reach our ultimate goal which is, how can we make none gamers interested in gaming and figuring out how to make already gamers buy into what we are creating; which by now we found out is the main window to include more women in this line of work. Liking games and playing them is a major factor that would aid us in our quest to expand game development environment. What most of these researches we found lacking is the personal side, which is hearing from the girls themselves and not just base studies and games on numbers and factors that changes with time and situations. Each person is different and depending on that person's experience with games, we will try to find a middle ground that connects both gamers and beginners to one common ground where they can both enjoy a single game. That way we hope to win over girls who are not interested in digital games and make them wonder, question and try to understand the system behind creating games. To do so, we used an

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analysis method by Steinar Kvale in *The qualitative research interview, (1997)* that guided us through these interviews by using in particular the story based interview analysis in which one would have the interview more of an open conversation that starts with the past and ends with the current event or even future thoughts. This concept goes hand in hand with our time line-based research as well.

3.2 Critical Design

Critical Design has been one of the most inspiring concepts in past few years and continuous to spark interest in us through people's different creation that arises questions, emotions and even confusion. As Swhan and Boehner's introduce to us what critical design is in their article Design Research: Observing Critical Design (2015) we understand the following...

“To the question ‘What is critical design?’, Dunne and Raby respond: ‘critical design uses speculative design proposals to challenge narrow assumptions, preconceptions and givens about the role products play in everyday life...’, an imperative motive because ‘society has moved on but design has not’”. (Swhan & Boehner, 2015)

To which later on they suggest or rather explain that critical design is meant for:

“/.../.raising awareness, exposing assumptions, provoking action, sparking debate, even entertaining in an intellectual sort of way, like literature or film” (Swhan & Boehner, 2015). And that is why we chose critical design as our design method since we have found that to be a successful game designer or any type of designer you must make your own special input while creating your projects especially if it's an independent work that would most likely represent a message with a hidden meaning for the viewer, or for a player to decipher. Making a meaning to our work is central to our goal and motives.

3.3 Kanban

Last but not least in our list of methods we chose Kanban as our project of method to guide us while working on the project that is the game. Kanban is a simple system to help teams develop their projects in a sufficient way, the way Kanban handles projects is

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through visual cues that tells us what to do. From our previous method which is interviewing people, this way we get an idea of what needs to be produced, after we have gathered these data we can put them into different sections in which the development should take its course. The log would be all the way from new “the information we got” to complete “the end results” in between those two steps comes many smaller steps to reach that end result, such as in progress, pending, analyzing etc... (Axosoft, 2013).

Kanban works best for us since we will be working in two different departments and those are coding / game building, and visual creating / art of the game, Kanban will allow us to take those different items and push them through these stages to one final product later on.

3.4 Summary of methods

These methods were chosen not only because of how well know them and have had experience with them in previous projects, but the fact that each one of them fills in the gaps of this research perfectly, such as the interviews which filled in a massive gap in our research and how well Kanban helped us keep everything in order and on the right schedule.

4. Design Process

Our design process started with conducting interviews to figure out what kind of game we're going to be making. The interviews revealed much difference between the individuals depending on their background, cultural differences and ages. We have in total interviewed 16 people, mostly females ranging from the ages of 17 to 30 years of age. This not to say that we will make a game exclusive to girls only no, that is simply not the case. Just as stated in our research we do not wish nor would believe that excluding half of the population by making a girl's theme only is a good solution, in fact this is nothing but a turn off by both genders. It is not about creating a genre for girls only

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but to prove that girls are just as interested in games as boys are and can share a common themed game that both can enjoy. To recap, the game will be designed or built by the feedback and how girls wish a mobile game would look like in the end proving that anyone regardless of gender can enjoy.

The initial idea was to focus on finding a middle ground that binds both non-gamers and gamers. Most of these interviews revealed that both of our targets were interested in mobile games such as card and puzzle games. The one common theme between the subjects which turned out to be true regarding our research, is the fact that all the informers enjoyed playing mobile games in their free time, to kill time or to tire their mind to fall asleep. Below are some examples from the interviews.

Interviewer: What do you think about mobile phone games?

Informer, age 30, female, Arabic: Mostly I play the easy boring ones to help me sleep, or while having breakfast.

Informer, age 28, female, Chinese: Mobile games are convenient, suitable for fast-paced life, people can use fragmented time to play mobile games. Personally, I like to play the game which can easily have a pause, Casual Games.

Informer, age 25, Chinese: mobile game is the one that really puts me in touch with the game and the playing time becomes more frequent. The first reason is because, in the past, my own computer performance was not good enough and I don't like going to Internet cafes. Even if I have my own computer now, but I think downloading and installing is a tedious process. Mobile games are very convenient.

Many of the interviewees enjoyed FPS (first person shooter games) and even MMORPG but one major common theme was card games. Card games are very unique in style and game play ranging from your average poker game to digital realm like Heartstone which is adapted from Warcraft lore and handles in magic, fantasy and action. There are many types of card games that have been developing since the 14th century like trick card games or even gambling. But now we even have a new genre that is inspired from science fiction books, movies and even other type of games. (Encyclopedia Britannica, 2007)

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Another clue that was repeated in the interviews was puzzle game genera. Puzzle games like mazes, jigsaw, memory games and many other types that relies on the wits of one's mind in solving a particular issue to advance to the next level. These types of games test the limits of the player by making them search for different ways of solving an issue or even testing the mind to see how well it handles the information it is receiving. Mobile puzzle games are well known and popular to be the type that people play to kill time or challenge the mind by understanding the logic and the rules that the game offers.

Players must unravel clues in order to achieve some victory condition, which will then allow them to advance to the next level. Completing each puzzle will usually lead to a more difficult challenge, although some games avoid exhausting the player by offering easier levels between more difficult ones (Puzzle video game, 2018)

Interviewer: What kind of games do you play? Type and preference (regarding mobile games)

Informer, age 21, Female, Swedish: Jag brukar spela pusselspel på mobilen, 1010!, block hexa, Candy crush, 2048, unblock me och plants vs zombies.

Informer, age 30, Female, Arabic: The Farm Heros Saga, i once played Sudoku and Sometimes i play Solitaire** (repetitive games)

Informer, age 28, Female, Chinese: Puzzle video game(PUZ), Strategy Game, Tower Defense game.

Informer, age 25, Female, Chinese: Semi-immediate turn-based system, RPG, Collectible card and Life simulation.

Informer, age 27, Female, Chinese: Recently, is Travel Frog, Casual Game and PUZ**.

Informer, age 22, Female, Chinese: I like to play card games, but it is also the most expensive type of mobile game.

** (PUZ) Puzzle games, (Solitaire) card game.

In conclusion of the interviews conducted; we have discovered that everyone enjoyed playing games even if they do not see themselves as “gamers”. The reason some of them stopped playing games was either due to growing out of it, time management or simply

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lost interest. But even though that is the case, they kept playing simpler games from now and then on their phones which enabled them to enjoy some free time by spending it on solving puzzles. From gathering all the feedback and results of the interviews and by combining both the none gamers, and gamers insights, we have discovered the following:

- 1- All of which enjoyed mobile games, easy accesses, suitable for fast pace life and convenient.
- 2- Puzzle games: most of the subjects enjoyed solving puzzles, weather it is Candy Crush or more complicated ones like Sudoku and Solitaire our targets seemed to enjoy games that challenge them and none “braindead” games.
- 3- The one common game or theme that every one of our interviewee have tried was card games; in which a bundle of cards is presented to the player and to either solve the riddle or make a match.

But what really inspired us from these interviews was the fact that all these three themes that these girls enjoyed was not found in a single game that they owned, thus we decided to create a puzzle card game in which we could combine all of their interest in one game.

4.1 Starting with the design of the game (stage 1/2)

With that said, the decision landed on creating a puzzle card game for mobiles that will be designed and tested throughout the entire process. The initial idea and design will be decided by us and using concepts such as Critical Design and Kanban to help us build the game through the different stages of processes.

The process for creating the game started with the following steps:

-Find resources, inspiration and tutorials to help us build the game for mobile. The first thing we had to think about is which type of a puzzle card game it is going to be, then which program and then how are we going to make the game work for both IOS and Android users.



Figure 1 Example of memory card game(play.google.com)

Luckily the internet is filled with tutorials and guides that show us exactly how to make a card puzzle game for phones using Unity Engine (which Donya have had experience with and Haojue started meddling with recently) and since it is a card game means it will most likely going to be a 2D type of game. The cards had to be done with programs such as Photoshop (PS) and Paint tool Sai (SAI) these software's used for creating images and even drawing with (SAI) focusing on using it for sketching and initial ideas of design for this project while (PS) for coloring and extra details. This also means we were faced with a new challenge; that being how to make our game stand out in the most unique way possible.

That's where the design for the cards came in, we had to think critically of how to make this puzzle card game our own by designing the cards in a new concept.

Designing our very own cards was very exciting for us since we are not only interested in developing a game but also designing it. And that is also where our personal touch and input will be. The most fitting type of puzzle card game we found being a memory-based puzzle game in which the player must rely on their visual memory to determine the place for each card placement and connect it to its sister. This type of games can be very complex and requires much attention to detail on visual memory and pattern. The game can start quite simple but then after clearing each level you are going to need to pay more attention because the difficulty and even the number of cards can increase.

- Alongside this, we will be creating prototypes of other smaller puzzle-based games, because the time required to finish the first part of the main game is quite massive, and that is mostly because of the art / assets that will be used. Meanwhile, one person works on that part and the other waits for the resources to continue, we figured to test other possible games “easier to make” during that time to explore more options and different types of puzzle games on phone.

The reason that makes this type of game our “to go to game” is the wide variety of options and processes that both digital game and image production can meet in one. That means we will be creating the concept art for cards alongside programming it and setting it up for mobile. The processes for creating the cards on its own is a major load of work because we will be needing 13 distinctive cards alongside 1 background and one backside for all hidden cards. The reason for that number is the tutorial and processes code we decided to follow in which a memory puzzle game was the main subject where you needed 26 pictures/ cards in total to make 13 matches. (Hunter Heidenreich, 2016) The processes for creating the cards started with sketching and choosing a theme.

This is where Critical Design came in, we explored many other memory puzzle games most of which used the typical face cards which you can purchase at any store or used familiar objects such as fruits, shapes etc... We wanted our cards to be special and represent something, not to just look acceptable, but we wanted to also include everyone in the game in some way to feel a connection to it and to find something tangible; that is why the theme ended up being horoscopes. The 12 signs are very unique from one another yet they share similarities such as elements and they all exist in the same space/galaxy and since it's the closest to 13 different cards the choice seemed perfect. The player will also have a fun time trying to guess which sign is which and to whom they belong to, that way they can see our very own intake on this rather old theme in a very modern set up. But since we needed 13 cards we included one more which will be the representative of all the cards (alpha card) where the constellation of all the horoscopes would be present.

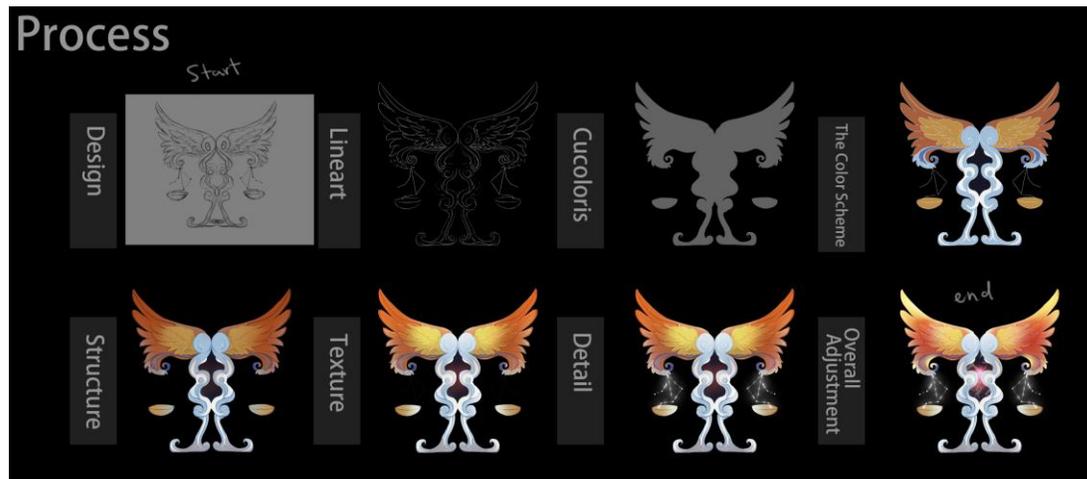


Figure 2 Libra Process using PS and SAI

1-As seen above in the process picture; we started by sketching the 12 horoscopes inspired by typical signs (e.g. the scale for Libra) yet implementing our very own twist inspired by its very own element. (e.g. air) to have everyone in the game, more or less, represented and finding themselves in it.

2-After that comes the clean up to make the sketch into line-art (a colorable base) in which the colors can fall into place perfectly without glitches or messes.

3-Following that the colors; depended on each horoscopes element (aka, fire, water, wind and earth) we carefully selected the shades to the colors that fits both the sign, its represented planet and elements to combine them in harmony.

4-Base coloring and in-depth coloring; where the drawings came to live in further light and dark contrast to make it almost 3D like. That's where the work became more complex and time consuming, each surface painted whether it is curved, hollow or bumped had to be thought-through and make the light plus shadows fall into their rightful places.

5-And finally, extra effects, while including the constellation for each sign we gave each image extra glow and effect to make it seamless.

All while ensuring the quality of the cards is of the highest resolution so when changing sizes and moving them around in Unity Engine we ensure them not being distorted in any way. This kind of process takes time but it will ensure that our card game will be one of a kind on a very distinguished level and that's the core of what Critical Design is; we had to think of each step separately and make sure it works well with the others so at the end they seem from the same family.

And to keep all this work in check, Kanban was there for us.

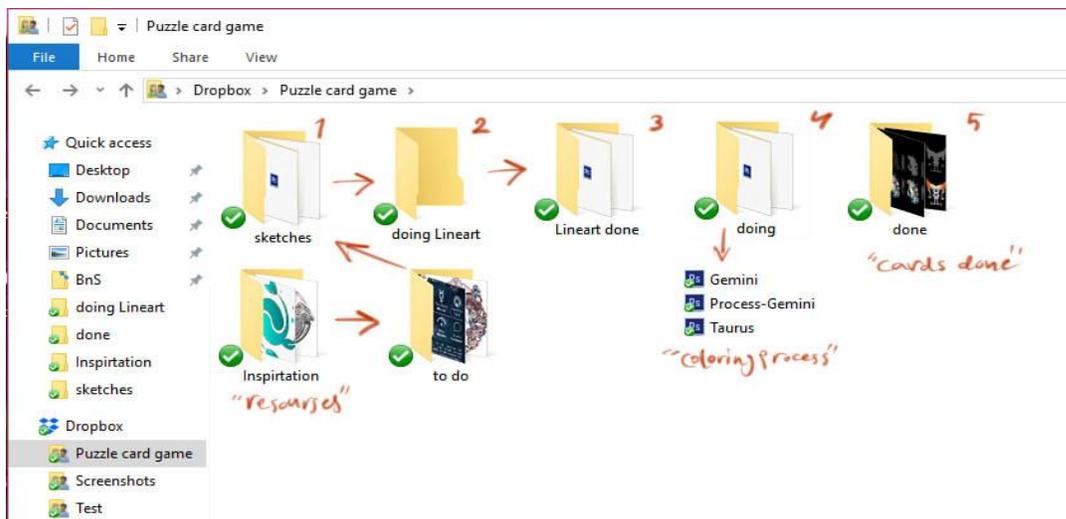


Figure 3 A screenshot of the Dropbox work box, a visual representation to our Kanban method.

As shown above and by using Kanban's project system techniques, we divided the work load by two people in three major steps which are, to do, doing and done. Under doing section we are also including prototype or testing phases in which we will be including prototypes of other games "side projects" while the main game is being made. The reason behind that is, making a card based puzzle game requires a lot of time and effort and while one of us is working on a long-term process, hands in the work for stage 2 process the other person has the time to make something else thus, taking advantage of that time

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to make prototypes from the sketches and so-far processes we have created in exploring other aspects and types of puzzle games, such as image puzzle based games.

4.2 Making the games (stage 2/2)

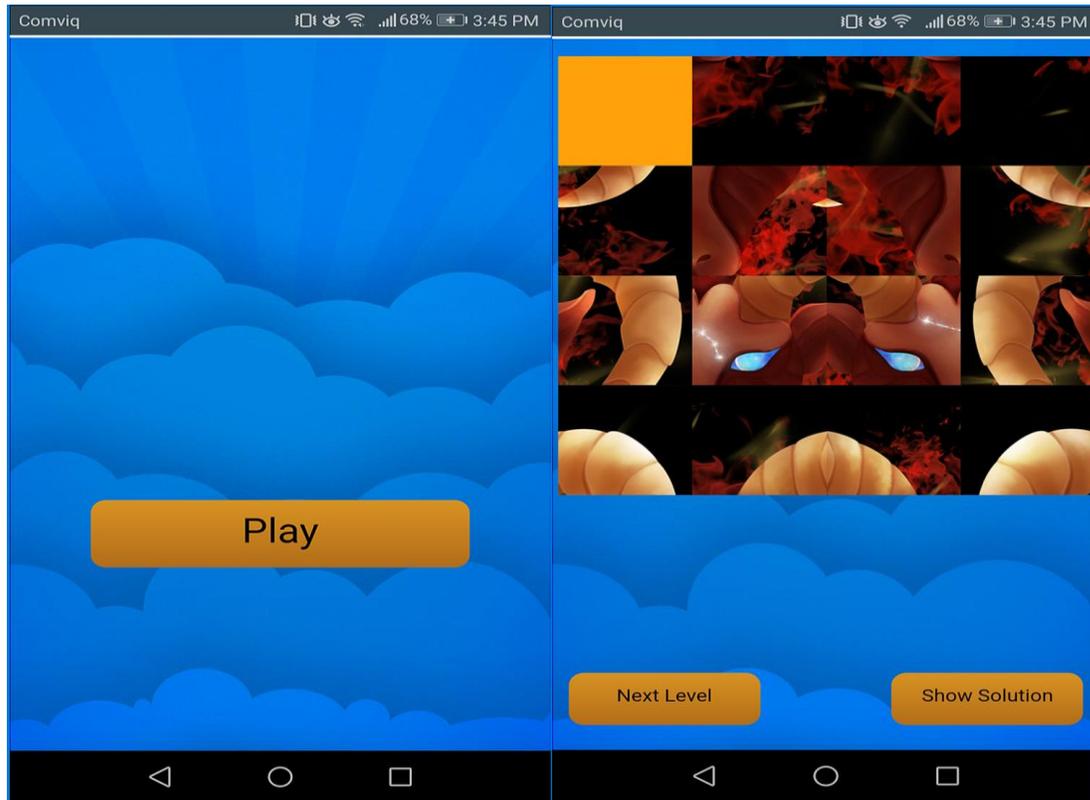


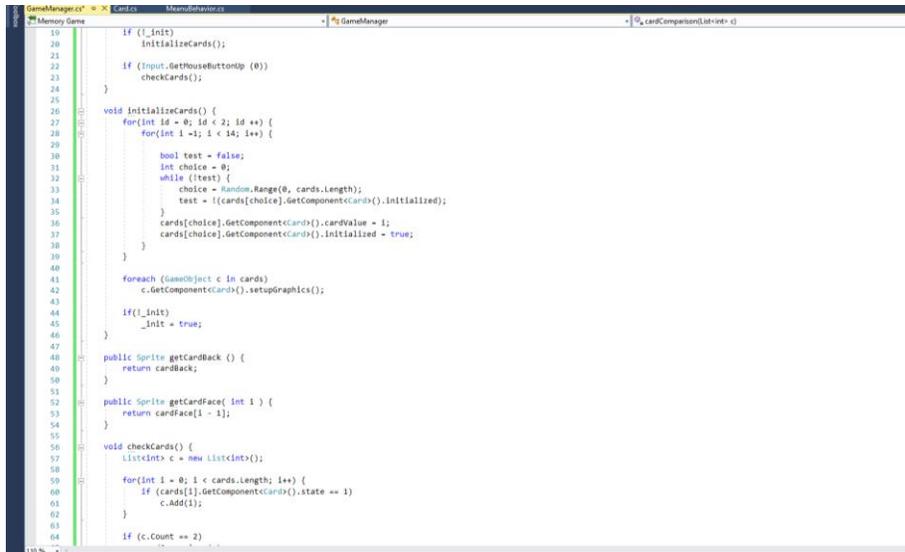
Figure 4 Prototype #3 a 15-puzzle game

The above is a prototype of a simple made game by using AppsGeyser, a Game Maker website that helps you create any type of games and apps. We used our very own digital creation in making this puzzle game which is called a 15 Puzzle Game and the task is to move around the little boxes to solve the image and advance to the next level. The idea is to have 13 levels at the end for this prototype as well.

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Moving on to the more complex game, aka the memory puzzle game is where we were met with many challenges, first of which being the code.



```
19 if (!_init)
20     InitializeCards();
21
22 if (Input.GetMouseButtonDown (0))
23     checkCards();
24 }
25
26 void InitializeCards() {
27     for(int id = 0; id < 2; id++) {
28         for(int i = 1; i < 14; i++) {
29
30             bool test = false;
31             int choice = 0;
32             while (!test) {
33                 choice = Random.Range(0, cards.Length);
34                 test = !cards[choice].GetComponent<Card>().initialized;
35             }
36             cards[choice].GetComponent<Card>().cardValue = i;
37             cards[choice].GetComponent<Card>().initialized = true;
38         }
39     }
40
41     foreach (GameObject c in cards)
42         c.GetComponent<Card>().setUpGraphics();
43
44     if(!_init)
45         _init = true;
46 }
47
48 public Sprite getCardBack () {
49     return cardBack;
50 }
51
52 public Sprite getCardFace( int i ) {
53     return cardFace[i - 1];
54 }
55
56 void checkCards() {
57     List<int> c = new List<int>();
58
59     for(int i = 0; i < cards.Length; i++) {
60         if (cards[i].GetComponent<Card>().state == 1)
61             c.Add(i);
62     }
63
64     if (c.Count == 2)
```

Figure 5 The game Code (Puzzle game)

Following a tutorial guide on how to create a memory puzzle game seemed a lot easier in theory but the results were much different. The tutorial we followed by Hunter Heidenreich was somewhat outdated and we had to adjust to the new implement and aspects of Unity to make it work such as new additions to the code that did not exist in the tutorial part, assets and even removing parts of the code because Unity Engine in recent years included in its already inbuilt-library some of the codes that were otherwise unnecessary to include. This led to many errors, bugs and imperfection to be met in the processes of making the code but nothing was a complete stop to our project. Thanks to Unity Engine and its error console option it helped in solving many of the issues.

One issue however was very difficult to solve, and that was the aftermath of the game creation. After setting up the game and testing it on PC, it was time to save it for mobile; Unity offers a list of options to save in different formats such as, PC, Mac, Android, IOS...etc. Many stated that the “easiest” format to make for phones was the Android one which is why we started by trying to save it to Android users. Needless to say; it was not easy. And saving it for mobile which is what our entire processes and research depended

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on was very critical for us. The issue being; Unity Engine needed specific type of files to save any game to Android based application, which means converting the game we programmed from Windows to one file that would operate on a smartphone. Unity required SDK file (the android reader file) and a JDK file (a Java reader script file) these two files were easy to find and download on Windows but what was harder to do is for Unity to recognize these two files. Browsing through many YouTube tutorials, forums, Unity trouble shoot files, the problem seemed endless and without any solution. One thread on the Unity Helper forum however gave us the idea that Unity has different versions and that means different libraries of recognition. And they gave a solution of either rerolling Unity back to an older version or using SDK plus JDK files from different versions. (Unity, 2017) Needless to say, we had to test around different version before Unity was finally able to read these 2 files.



Figure 6 The game - end process

5. Conclusion

The main reason that we sought out girls to inform us themselves of what they like and dislike was not only for our games creation purposes but the fact that a major link in these great studies was missing. Many studies (all of which we've come across) mostly "guessed" what girls wanted or liked the games to look like but they were missing the

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most critical informer of them all, girls themselves. These development teams were missing the actual average girl's opinion and input on things, to make someone interested in any particular thing it is greatly recommended to include them through the process, ideas or brainstorming and development.

Even more importantly, developers need to nurture an environment that backs this up.

"It's about creating a visible culture that is genuinely open to all and doesn't just pay lip service to the idea of diversity," (The Guardian, 2017).

When we interviewed the girls from around the world they were all very different, and that depended on many factors; the ways they were raised in, culture, society and even religion that had a big factor for the way they think and behave. The situation changes always from one girl to another, one interview with an Arabic girl (30 years old) was more of a conversation of finding the truth behind what she meant, and what she desired, while an interview with a Swedish girl (21 years old) was more about answering each questions she was asked to the utmost length while providing details as much as possible and never crossing the frame of the question at hand, unlike the 17 year old half American half Japanese who wandered off in the questions and even jumping to other questions that we had prepared but not yet asked. Each person is different, each interview had a unique style depending on how the person responded, but they were all agreeing on one thing, "there is no boundaries in games" whether it's a game marketed for "males" only, it did not stop any of these girls to test these games out, all of them did not feel excluded by a certain game in fact, it was nothing but a motivational aspect for them to go out on their way to just try that game and prove that it's not about gender.

Informer, age 21, Female, Swedish: Nah, I've always played games that were seen as games for boys. I like to show that even girls can play games that boys play. It was some year ago when I wanted to play GTA V and it was some relative of mine who said "why do you want to play that game? Its only for guys you know" and that made me irritated because girls can also play those games. So, after like a month my parents bought me that game and every time that person comes to visit I would play that game in front of them just to show that a girl can play it too. So, if there is a game specifically made for boys I would buy it just to prove that girls can play them and that they can't decide what games I can or can't play.

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Excluding games by society or even the market is not an option at this point anymore, we want to create something based on what we like and what everyone else would too, gender should not play any factor in creating games which means” games for girls” is something we do not condone nor support, games should be open for all. And our interviews with these subjects proved nothing but the truth of how these girls felt upon these questions. It is not about making a colorful “cutsie” game, but the content, story, game mechanics and emersion is what they look after. So, to answer our very own thesis question, **How can we change or expand game development to include more women?**, simple yet not as easy to achieve. First of all: we need to understand one common thing, changing the entire industry which is in now days one of the largest and most important business is not that easy. From Barbie to Mortal Kombat (1998) all the way back in the 90s where the authors of this book had a similar question to ours but their conclusion was without any answer or proper response to this issue:

We haven't found the answer yet. There is almost certainly not a single answer to the challenges surrounding gender and games, but as we broaden the range of available options, we also open up new space for a broader range of experiences and identities for both girls and boys. (Cassell & Jenkins 1998)

Cassell and Jenkins propose that to achieve a new space for neutral genders in the game industry one must push for these questions to receive answers about what is boyhood and what is girlhood. But moving on in time and research going all the way to the very recent studied like Growing Pains (2016) and other studies by Alison Harvey & Stephanie Fisher whom wanted to find a final answer but again their results were inconclusive. They do acknowledge a shift and a change just like what Cassell and Jenkins hoped for but the road is still long ahead.

/.../hopefully, we will find not only a diversity of perspectives but also a plurality of types of action for change in an industry still plagued by conservatism and exclusionary patterns reproduced through the hegemony of play. (Harvey & Stephanie, 2016)

The reason we believe the lack of answer is the fact that this is a huge industry that is growing largely every day. And according to Catt Small, a product designer from

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SoundCloud who also makes games, we can safely state that it is indeed up to each one of us to change. (TEDx Talk, 2015)

We can choose to make a difference, starting within ourselves. Instead of calling out, we can call-in to unlearn our privileges. Such a task is not easy, especially for women in leadership roles and positions of power, whose reflections on the “unintentional violence” caused by their actions or decisions is intensely felt, as it is heightened by an amplified sense of responsibility and accountability to community members who already view themselves as vulnerable. . (Harvey & Stephanie, 2016)

Gender and diversity in general is missing in gaming industry and that goes back to culture, society and many other situated factors. Situated knowledge got it right and it is a rough subject to indulge in. Whether you agree with Donna Haraway or not her point of view and analysis to this concept is based on observation that one cannot deny.

So, I think my problem, and “our” problem, is how to have simultaneously an account of radical historical contingency for all knowledge claims and knowing subjects, a critical practice for recognizing our own “semiotic technologies” for making meaning, and a no-nonsense commitment to faithful accounts of a “real” world, one that can be partially shared and that is friendly to earthwide projects of finite freedom, adequate material abundance, modest meaning in suffering, and limited silliness. (Haraway, 1998, p. 579)

We are changing with time and situations, but it's always about taking the first step and taking things with a great grain of salt. Even if we focus on the negative side and endure in these extremely disturbing events, shouldn't set us back but build us to further understand the situation and build upon it. Luckily most societies are accepting women in other industries and the list continues, this not to say that gaming industry excluding women but there is a gray line that making women not interested in this industry although, studies clearly show the consumers for games is almost equal between the two genders. (TEDx Talk, 2015) But then we look at industry itself, that's where the numbers shift greatly. So, what gives? Catt Small in her presentation explains how it used to be. It was a women's job to program but with more development the programming task became more difficult and it converted to a man's job. And thus, the media was promoting these job for men by subjectifying women in other themes through media. (TEDx Talk, 2015)

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Whether it's cause girls at young age not getting registered by their parents to computer lessons or if society tells them what they should be interested in, is not what we should blame. Each individual should have a say and will to change and or do whatever they want. If a girl wants to become a game developer she should get the same treatment as any other and the same goes to any guy who is interested in more “feminine work” then he should be free to do so as well.

At the end, it comes down to each one of us to make a change and that starts by speaking up! Stating what's on your mind and speaking through your heart is a lot more difficult for some than others, people of any color or gender can contribute to the gaming industry with the proper guidance. The DIY movement started because people wanted to learn things by their own whether it was expensive to get a proper education on a certain subject or feeling excluded by a certain group to achieve what you want. (Wolf & McQuitty, 2011) Having difficulties and or hinders along the way is fine, coding and game programming is not easy but one has to learn in order to improve and it comes down to each individual's ability to learn and contribute their own ideas and creation later on. Making small steps and having the courage to fail is important to succeed. One must be humble enough to ask for help from time to time and there is nothing wrong with that, one human being can't do everything on their own and the process of learning and creating always takes time and hard work. In conclusion to help make the gaming industry a better place and a more open place for everyone is up to us.

6. Discussion

The start of this research was rocky, meaning we stumbled upon many hinders along the way whether it was regarding the theme question or finding reliable resources, this issue has proven to be a difficult area for in-depth research. The reason behind that is the fact that no one can keep a professional none biased opinion which made some resources obsolete and unusable in some cases for this research. As we have mentioned before, feminist groups and feminism as a subject is still a sensitive area with many extremist

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and harsh critiques around the world. This makes the movement even more stubborn and emotional when met with many difficulties and lash backs from society or none feminist groups. We have come across studies and projects where people have had to remove their feminism label based ideal to be able to appeal to everyone else and make more sponsors. In the research part of this thesis we mentioned a group that started their project (DEI) to support women mostly who were unable to program but were interested in creating games, this project had to shift quite fast after it was under the headlights for a while and to make more sponsors they had to “ignore” the feminism part of the project.

.../there were some tensions around the organizers' reluctance to identify the project as feminist work. For example, they did not see the value in acknowledging or discussing the barriers that the female participants identified as preventing them from achieving (or at least feeling a sense of) success in this industry. (Harvey& Fisher, 2016)

As such many other projects followed in foot and had to tone down their opinions to succeed in the industry. And that brings us to the media effect; the media intends to keep us engaged but not informed about what really matters, when something bad happens like the Gamergate rant it was the main streamed event that every forum focused on and tried to push down our throats showing how poor women are and how vicious the guys were. But news such as (DEI) and other groups that have formed a community not based on negativity never gets the same attention. Why? Well it's simply just not interesting enough. As a fact news media always chooses to make negative headlines instead of informative or subjective. Headlines such as "Women leaving the game industry" "You want to earn same amount as men, well maybe in 50 years!" (The Film Theorists , 2016) these are actual news headlines and articles found on the internet when we were searching for resources and they are indeed disturbing. There are always gray areas that will stay underrated because they don't spark enough attention and value to the media. Starting this project, it was expected to run into extreme feminist groups that loathed how everything is being handled and we can't blame them for feeling this way in fact no particular group to blame but ourselves in general. We as people always tended to exaggerate things through social media and even the newspapers started to walk the same walk because we allowed it to by giving it attention. This not to say we should ignore the

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victims of any bullying act whether gender or race based but we should be including the other side as well.

There has been a tremendous amount of success in shrinking many of these problems through the past few years which we have found and included in this very paper but the amount of time and digging it took us to find is worrisome. Because again, the negativity side on the internet is what covers everything good. Just by following the success in women's history and development in so many departments, technical, professional and many more jobs that were considered "manly " we witness a huge breakthrough in our world today and especially in Europe where we have the largest number of females working in politics, medicine and engineering. (Catalyst, 2015) It is possible to improve more but we deserve to look at all the good that has been done and not poison our minds with negativity only.

Throughout the entire research process, we needed to refer to many materials from different aspects to enrich our own knowledge and information range; academic literature and books are indispensable but at the same time, situated news reports and events happening in the society cannot be ignored. Because at the same time, the gaming industry is a very large field that is rapidly developing and growing in a competitive environment, which requires us to focus on situational knowledge and integrate "situated knowledge" as a way of thinking into the whole research process makes it extremely suitable and necessary. For example, when we read the book "From Barbie to Mortal Kombat" which was written in 1998, In it they mention how to increase women's interest in games. One of them is to change the colors of objects in the game so that the game screen becomes "pink", "cute" and "feminized". It is undeniable that this method is indeed a good plan in the early stages of game development and it might seem like a successful way to enlarge the market, but that wouldn't last long as the interest changed greatly in time. We are now more aware than ever before and fast fixes like those do not always pay-off the way we anticipate them to.

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"Situated knowledge" is knowledge about a specific situation. Imagine: two very similar mushrooms that grow on different sides of the mountain, one is nutritious and the other is toxic; The knowledge of eating mushrooms on the side does not apply to use on the other side of the mountain. Similarly, after timed transition, the way to improve women's participation in the game in the early stages of game development is not necessarily suitable for the present era. We always combine situated knowledge to reflect and critically reflect on the relevant knowledge and information we have absorbed, thus helping us to obtain more objective and more accurate conclusions. (OpenLearn from The Open University, 2011)

In order to get a conclusion that is more in line with contemporary circumstances to improve the accuracy of the research, we also combine another method; we interviewed females to view how they think about games and get richer verification. That is, "to make games become pink, cute, and feminine; this approach has also changed in the current era; after the interview, we found that more and more females are beginning to like the game that was previously is labeled as a "male" game. If we didn't incorporate situated knowledge as a way of thinking into the whole study, it would have caused us great losses in which we would not have even thought about the contemporary situation and females' perception of the gaming world which changed significantly the course of our final results.

Only when we are closer to the situational knowledge will it be more beneficial for us to seek new solutions to increase females' participation in the game industry and design more popular games.

We took Donna Haraway's concept as a way of thinking which helped us be more objective. For example, in the course of our research, we knew about the most sensational game industry gossip in the United States during 2014, #Gamergate. At the time, players, game media, and game developers posted some radical remarks on the Internet and produced some radical actions that made this event more intense. Under this circumstance, we must follow the knowledge presented in this situation to help us to

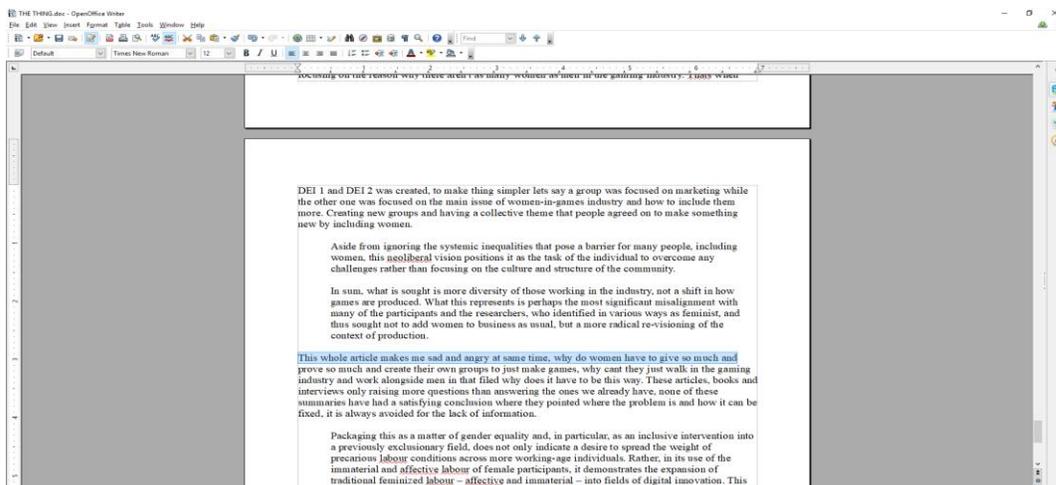
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understand the process of the whole incident and the meaning behind it; help us not to be involved in the mood of any party to analyze this incident about a discussion of gender discrimination and the abuse of feminism in the game industry. We also found that one year after this incident, Shira Chess and Adrienne Shaw as professors of the Department of Media Arts, Media Studies and Production, together they published academic papers and began to respond to feminist game scholars:

/...aware of and began responding to feminist game scholars by analyzing GamerGate conspiracy documents and social media discussions related to the now infamous “DiGRA fishbowl.” Worries about the opacity of academic practices and a disparaging of feminist knowledge-making practices dominate these documents. By looking at these discussions and practices through the lens of conspiracy theories Fenster, 2008 Fenster, M. (2008). we consider the broader meaning of GamerGate's attention to academia. (Chess and Shaw, 2015)

Looking back our choice for having Situated Knowledge alongside us through the entire processes was probably the best decision we have made, this method allowed us to have a bird’s eye view on things with new perspective. We were analyzing and dissecting everything we ran into even amongst ourselves when we wrote something down in the heat of the moment. and from all the pain that was expressed we had to let things sit for a while, cool down and come back with a clear mind to understand why we wrote what we wrote and how it affected us.



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Figure 7 the processes of gathering and reading all the research we found

But interviewing the girls was the bright side of all of this; they were happy, content and brave to actually explore new possibilities which made all of the stereotypes, well, stereotypes with no meaning to actual life whatsoever! These two methods must be the most important by far any other one can easily be replaced but not these. They were the foundation for our work, research and confirmation. The processes for both the research part and creation of games was very insightful, meaning we learned new things in both the way to read and to make, after exploring over fifty different articles and resources we landed on a bit more than twenty to surround our research around and build this entire thesis upon. Most of which were very resourceful such as *From Barbie to Mortal Kombat* (1998) and *Everyone Can Make Games!* (2015) in which we learned the entire history of gaming and the industry of/for women in this department.

Now that our research and game development process is done, it is time to breakdown the results and connection we have found that would also work as a vision for the future.

First of all, our theme question where we wanted to find a solution to increase the participation rate of females in the gaming industry. In conclusion, the main core lies in finding the foothold for girls in the game industry and the starting point of work. With the help of situated knowledge, we have a better understanding of contemporary society and found that the issue of “increasing interest and expanding the female crowd” is now being improved. Through the form of interviews, we have found that girls they are becoming more interested in more game’s categories and have been continuously improving their gaming skills; In the past, those games that were labelled as "male" are no longer suitable for contemporary society; more types of games are no longer exclusively for men; During the interview, we heard many times of a concept that female players are very willing to try different types of games. They think that girls are more widely accepted for different game types than male players. This is a good start. In the hearts of girls who are already players, they have become very confident that girls may play better than boys.

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Mobile games are convenient, suitable for fast-paced life, people can use fragmented time to play mobile games and almost everyone have access to a smartphone. This is one of the most important reasons why we finally decided to make a mobile game.

Secondly, to find the starting point for girls how to join the game industry; we got a deeper experience after we practiced developing our game. In the early days of our development of mobile games, one of our biggest concerns was code technology. In this respect, we are not confident. Even if we already have a good concept of game design, we cannot say the same applies to coding. Our concern comes from the fact that we do not know whether we can implement all of our design of game concepts with code or make a larger more open game. We strive to find solutions that help us achieve the game by searching for more tutorials/guides and to get more practical help. We use entry-level code which we learned in video tutorials to make a mobile game so as to verify that as long as people work hard enough, nothing is impossible, we successfully wrote our own game within 1-2 weeks through our hard work and dedication. Code technology is indeed a very difficult area, but it is not as far away as imagined. Starting with entry-level code is a good start. One of the iterative processes we developed for the game was to look for guides on how to create different games and try to code them.

In the process we had both successes and failures. However, it has become more optimistic in terms of learning code programming from the 0-base. Like some of the organizations we mentioned above, such as Sony launched a project similar to the game training camp to recruit young girls interested in video games or technology to participate, Brie Code and Jade Raymond as successful female game developers, Pixelles, DIGRA, WIG, DMG, etc. are all working hard to improve the diversification of the gaming industry and encourage female to choose video game design as a career path. So, at the end it is indeed up to each one of us just like what Catt Small had mentioned in her presentation, in which we discussed in depth as well in previous part, that we can as individuals start our own way into the gaming world and there is nothing to stop us but ourselves.

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In the Future we hope to find new more useful articles like those above to further our research and analysis of the gaming industry. This entire subject is still and will always be a very critical and open field for exploration and expansion. It is not just about entering the gaming industry world but the right to be included in everything the world has to offer and that we should not be judged by our gender or skin color. This fight for rightfulness will not end in one day but it is a long-lasting process that will most likely stay with us for much longer time, unfraternally. We wish that it will not take as much time to get to the next step but to move on faster and this time maybe in just few years another breakthrough is bound to happen.

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