

# Virtual Reality, Oculus Rift, and Otome game

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## ABSTRACT

I am interested in Virtual Reality in the context of gaming, so for the purpose of the study of wearable technology, I would like to conduct a research on the application of the Oculus Rift on Otome games (the Japanese dating-simulation Games for girls). On this paper, I will first introduce the idea of Virtual Reality (VR) and how it has been developed. Secondly, I will explain the concept and history of Otome game. Lastly, I will analyze the different aspects that make Otome games appealing to female teens and young female adults in East Asia, and how these aspects are enhanced by Oculus VR.

## Keywords

Virtual Reality, Oculus Rift, game, simulation, immersion, cultural experience, video game, pc game, Dating-simulation Games, Japan, Otome Game(乙女ゲーム), East Asia.

## INTRODUCTION

Virtual Reality (VR) is defined as a computer-generated environment that simulates reality through manipulating the senses with sound, vision, or smell...etc. Defined by Jonathan Strickland the VR experience should contain two points: First, "three-dimensional images that appear to be life-sized from the perspective of the user". Second, "the ability to track a user's motions, particularly his head and eye movements, and correspondingly adjust the images on the user's display to reflect the change in perspective". One of the most prevalent ways to build the virtual reality experience nowadays is to wear a headwear with the screen in front of your eyes. Several kinds of VR devices from different companies have been developed, and Oculus Rift is one of the most well-known VR devices in the U.S. Oculus Rift was developed by Oculus VR, after the company has raised 2.4 million U.S dollars on Kickstarter in 2012.[1] In 2014, Facebook bought Oculus VR for 2 billion dollars.[2] The main usage of Oculus Rift is gaming. There are several types of games that seem suitable with the usage of VR experience, such as space ship shooting games, horror games, and first person shooting games. However, in this paper I would like to discuss the possibility of using VR in Otome games, which are also known as the Japanese dating-simulation games for girls.

## VIRTUAL REALITY

### Early day in VR

The history of Virtual Reality can be traced back to the second World War. In WWII, U.S. military invested money on developing this cutting edge technology. The most significant study was the research done by Augmentation Research Center (ARC) in Menlo Park, CA, that indicated the possibility of the computer becoming an extension of the human body.[3] It can easily be said that what they had predicted has become true.

From the article "The rise and fall and rise of virtual reality" published on The Verge, "In 1962, filmmaker Mort Heilig registered what might be the first true VR system: the Sensorama, an arcade-style cabinet with a 3D display, vibrating seat, and scent producer. Heilig imagined it as one in a line of products for the "cinema of the future," but that future failed to materialize in his lifetime." [32]

In 1965, Ivan Sutherland from Massachusetts Institute of Technology (MIT) produced a head-mounted graphic display device. Sutherland's research reinforced the concept that computers might enlarge the human capability via computers' sensory motor. Furthermore, his paper not only discussed computer vision but also other approaches such as joy sticks, stereophonic and force-feedback mechanisms to increase immersion inside the man made imaginary world.[4]

### VR and interaction

Timothy Leary, a Harvard professor who advocated for VR, pointed out that screen technologies such as television and video somehow change our perception of the term of "reality". In this context, VR provides us an active way to interact with images and sound, which makes immerses the user within the experience. [4] The timing of feedback and what kinds of feedback are important factors in making the experience vivid. If the feedback matches the user's cognition, the experience can lead a stronger sense of reality and reduce the feeling of discomfort. The feedback provides the feeling of the experience. For example, when you are moving your hands if you can see the hands inside the screen also moving, it may trick your brain that you are really in the real world. Although wearing the heavy headset may not be the best way to experience the VR, it is now the most practical way for the public to experience it, and the most well-known headsets in the market is Oculus Rift.

## OCULUS RIFT

### Introduction

Oculus Rift was invented by Oculus VR in 2012 and bought by Facebook for 2 billion dollars in 2014. What is significant of the rise of the Oculus Rift is that Virtual Reality is now practical and useful enough to be a marketable product. Although Oculus Rift is mainly for gaming, it also has the potential usage for social networking.[5]

### How it works

There is a slight difference between DK1 (Development Kit 1) and DK2. The following is an illustration of the DK2, which I will focus on in this paper.



Picture 1, the Oculus Rift DK2

In the picture above, the Oculus Rift DK2 has two cables. The graphic on the computer is sent via the HDMI cable, which has better graphic cards than the first version, and another cable is USB cable. Unlike DK1 that needs additional power supply, this version combines power supply and data carrying within a USB cable. DK2 headset has more possibility to merge different kinds of output or input device. Another distinct difference between DK1 and DK2 is the positional tracker. In the DK1 version, the head movement only allows the computer to capture the absolute rotation of the head. On the other hand, DK2 has added an additional webcam-like device which has to be put on the laptop separately. This device allows the computer to track not only your head's rotation but your position. Although, it has a distance constraint, it gives developers more freedom to create a VR experience. However, it also creates other limitations. In the DK1, it allows users to turn back their head, but the DK2 does not possess the same capability.

All the pieces above transfer data back to the headset. Inside the headset, there are two lenses which make the graphic on the screen fit the users' sight. There are several different kinds of lens set, which will give users the ability to adjust for different eyes sights. Oculus Rift has an

incredible motion tracker components inside the headset, which enable it to poll data 1000 times a second, and catch tiny movement of the users. [6]

### Best practice

There are several possibilities to give the most comfortable experience to the users t. [7]

#### *Minimize latency*

Latency is the time gap between the user's movement and the computer reaction. For example, when you turn your head to the right, the time gap between when the computer gets the signal and the software reactions to make the on screen camera turned is called latency. Latency is the main reason that causes the motion sickness. To reduce the latency, developers could make their software run in the same frame rate as the Oculus Rift, and try to avoid any code that will consume too much resources in the computer that may slow the frame rate.

#### *Movement*

When the users are moving around the environment, the screen inside the rift should change according to the user's physical movement in order to reduce the feeling of discomfort. As a result, shaking the camera (a.k.a head bobbing), or zooming the camera inside the software, movements which are used a lot in the non-VR games, may not be appropriate.

#### *Screen*

Unlike non-VR games, important information in the Oculus VR game may need to be displayed in the center of the screen. As a result, the interaction in VR game will be totally different from that in non-VR games. Dedicated pattern and other high spatial frequency images may lead to simulator sickness. On the other hand, giving some visual hints, such as the frame of the car, may reduce sickness.

After gaining a good grasp of the best practice of Oculus Rift, developers will gain a more thorough understanding of how they should work within these kinds of limitation.

### Interaction in Gaming

Developers use several kinds of input and output devices to make the VR experience with Oculus Rift more immersive, such as microphone and keyboard. The keyboard, which is the most common input device for the games, may not be the most ideal choice for the VR experience, since the users will not be able to see the keyboard. As a result, below I will introduce some optional methods using existing products to interact with Oculus Rift inside the virtual reality experience.

### Leap motion



Picture 2, the leap motion

Leap motion is an input device that allows users to use their hands to interact with computers. It is a small device that contains two cameras and three LEDs. These enable the device to capture a wavelength of 850 nanometers around the device.[8]

Leap motion also has a combination kit for the Oculus Rift which allows it to be attached to the front of the Oculus headset. With such device, detailed hand movements can be captured by the software, and it also enables other potential user interactions, such as using specific gestures of the hands to trigger a event.

### Kinect



Picture 3, Kinect

Kinect is an input device that allows computers to detect and capture user's body movements. Unlike leap motion, Kinect captures the whole body movement instead of just hands. The Kinect sensor has a built-in color VGA video camera that can detect colors, a depth sensor that has infrared projector, a monochrome CMOS (complimentary metal-oxide semiconductor) sensor that captures the depth of the object in any lit environment, and a Multi-array

microphone that allows players to control with their voices within certain distances.[9][10]

### OTOME GAMES

#### Defining Otome Games

Dating simulation games, in general, are video games that concentrate on dating and romance, which might include erotic elements. Otome games(乙女ゲーム) which can be translated to "maiden games", are dating simulation games that target at women or young girls. In those dating simulation games, the player leads a female character to date male characters in the games. Dating simulation games are quite well-known in Japan, and other East Asian countries. However, it is not very common in other parts of the world. Some non-Japanese audience may make fun of it.[12]

In Otome games, players will make efforts to explore different possibilities to win the male characters' heart.[11] Otome games can include different kinds of themes that can be history, science fiction, fantasy or others. These games generally have branching narrative structures. Players can have romantic experiences with different characters. Furthermore, players sometimes need to put in extra effort by participating in specific training in the games in order to win the love of their favorite male character. For example, if the game is a high school style Otome game, heroin may need to study or to participate in extracurricular activities to gain a particular character's attention.[12] The purpose of these different types of training in the game is to create a more immersive gaming experience for the players.

#### Market

It is quite obvious that the dating-sim games market is confined within the regions which are greatly influenced by the Japanese culture, such as Taiwan. Dating-sim games can be purchased easily in video games stores or on the internet, through Amazon and eBay.

According to the study revealed by the Yano Research Institute in Japan in 2014 the dating simulation games' market has grown by 10.2% between 2013 to 2014. Furthermore, inside the love simulation games category, the dating-sim for girls (Otome games) is expected to keep growing in the future. Although dating-sim games are not the most profitable category in the Otaku economy, it is considered as the market with the highest growth potential. [17]

#### Audience

The internet survey conducted in Japan in May, 2014 shows that 25% of the unmarried women between 20 and 30 years old have played Otome games.[13] Another research indicates that among Japanese females, 77.6% of the 10 and 19 years old, 71.7% of the 20 and 29 years old, and 50% of the 30 and 39 years old have played Otome games on mobile devices. This research data suggests that Otome games is a popular genre among Japanese females.[14]

Although the non-Japanese Otome games' fans are less than other type of games, it still have it market oversea.

### What makes it "interesting"?

In the research made by Tanikawa Misaki from Shizuoka university, the survey suggests that the reasons why players plays Otome games may be generalized in three categories: reality, escape, and wishes.[15]

#### Reality

For the players who play Otome games for this type of reason, they would like to "fall in love with the character they like", or "experience the love they have never had before". This kind of player enjoys the gameplay and the setting of the game and seeks escape from everyday life with the game. They prefer a story that is not totally unrealistic and that makes sense. For example, Brother Conflict (ブラザーズ コンフリクト) is the Otome game about having romance experience with several step-brothers. This may seems ridiculous, but it still possible within the real life. The connection between fantasy and reality makes them can seek the comfort inside games. This connection between fantasy and reality allows them to seek comfort inside the games. In the research, it also shows university students are more likely to play Otome game for this reason. In the research made by Trend Lab, 74% of 500 women who are between 20 and 30 years old believe that Otome games give them the chance to escape from exhausted real relationships.[13] According to the research, this kind of reason may not make the players stick to the games, but it does give them the taste that the character inside the Otome game should look charming, sound alluring, and has delicate art style, since reality players are seeking for the relaxation.

#### Escape

The second reason why players play Otome games is that they want to escape from reality. For example, for the girls who have not in the relationship for a long time, but because of their personality or other reasons they fail to have a boyfriend. As a result, they want to "become the other person" or "fall in love". This kind of player may be frustrated with reality and want to seek comfort in the game. Furthermore, these kinds of explanations are attributed to the stereotype of the dating-sim gamers who are not popular or having some problem to get into the relationship so they started to play dating Sims. The key points to attract this kind of player are stories and the World view.

#### Wishes

Lastly, the Otome game satisfies the player's wish for "having an easy love without anything to worry about" or "have a wild love experience". Unlike the reality players, this kind of player would like to experience game events that are totally impossible in the real world, such as romance within the science fiction theme, magic world adventure or fall in love with historical heroes. Hakuōki

~Shinsengumi Kitan (薄桜鬼 ~新選組奇譚) is a good example for these explanation, it is the game that you can try to fall in love with Japanese samurais who is famous in Japan History. For this kind of players, they focuses more on the game narrative and character design. In Tanikawa's research, it also indicate that this kind of players have higher tendency to be addicted to Otome games than other kinds of players.

### DIFFERENCE BETWEEN JAPANESE AND OTHER COUNTRIES REACTION

I had the survey by Tanikawa Misaki translated into English and Chinese and made some adjustments, in order to see how is the expectation of the Otome games for Japanese players different from that of other non-Japanese players. I received 73 responses, and most of them are Chinese speakers ( including people from Taiwan and China ). Most of the Chinese speakers come from Taiwan. Below is some statistic graphics to show the outcome of the research.

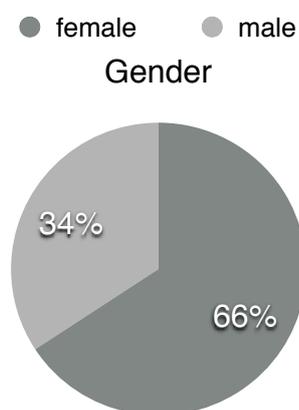


Chart 1, gender of the responders

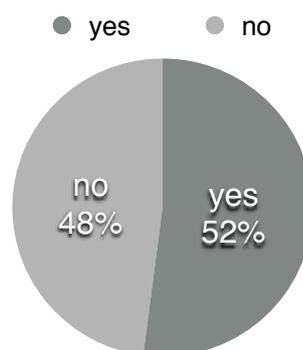


Chart 2, Have you played any dating simulation games before?

Chart 3, age group from

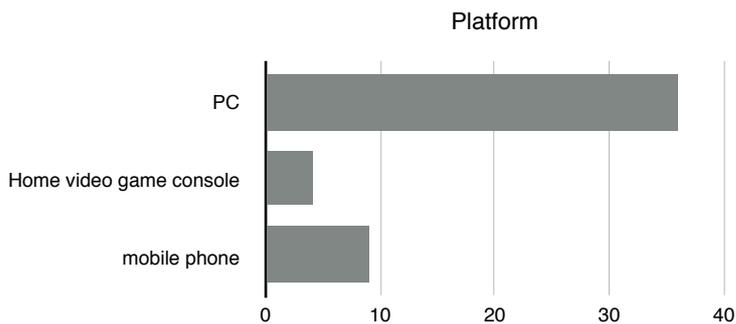
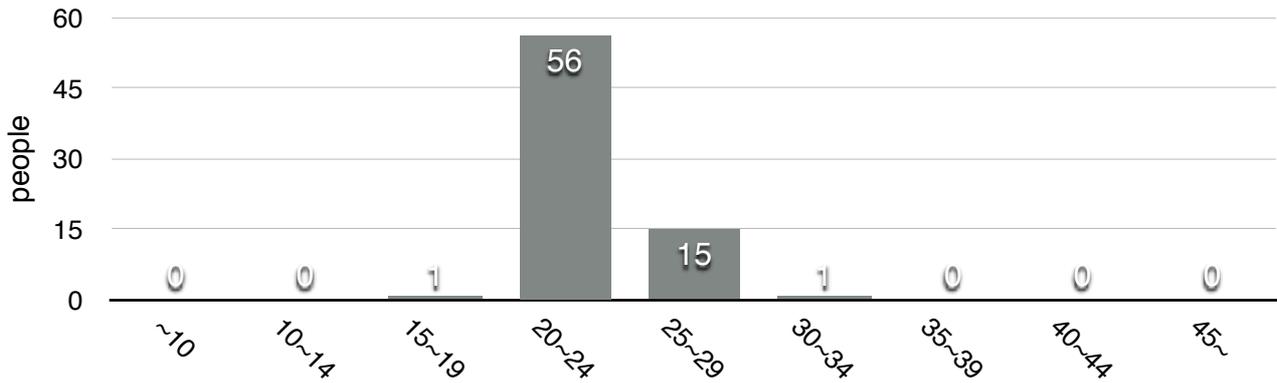


Chart 4, What kinds of platform did you use to play the dating simulation game?

The most of them are women between 20 to 24 years old from Taiwan. In the survey, 52% of the interviewees (38 people) have played dating simulation games. Taiwan is the East Asian country that is mostly influenced by Japanese culture.

Because of the Japanese colonization period, Taiwanese are more acceptable to Japanese culture.[20] Due to the colonization era, Taiwanese shares similar cultural perspectives with Japanese. Since WWII, Taiwan has been governed by Republic of China Government. Because of the terrible invasion by Japan to China during WWII, R.O.C government has been regulating the Japanese culture influence in Taiwan. After 1988, Taiwan's government loosened the regulation of Japanese comics and other Japanese products sold in Taiwan. Since then, Japanese comic and its subculture has resurged as a significant cultural influence in Taiwanese society.

In the survey, people who have played dating simulation games tend to use PC to play the games. The reason might be that fewer Taiwanese players tend to buy home video game consoles. Furthermore, a lot of mobile dating sim games in Japan are not translated into Chinese. Dating simulation games require a lot of text reading, so for people who cannot read Japanese it might be hard for them to play dating simulation games.

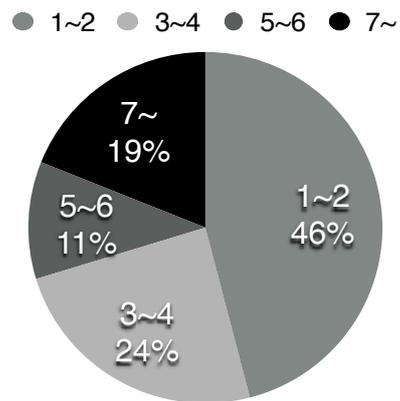


Chart 5, How many dating simulation games have you played before?

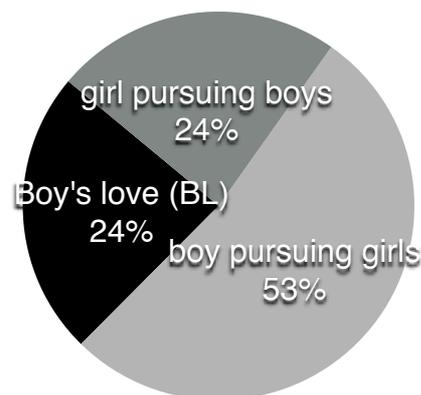


Chart 6, What type of dating simulation games do you prefer?

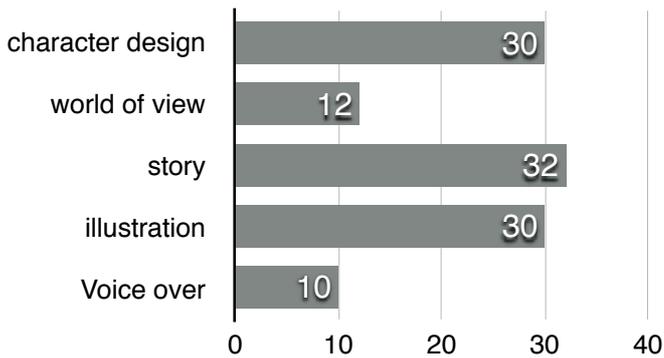


Chart 7, What are the things that are for you when you play the dating simulation games?

Most of the respondents played only 1 to 2 type of dating stimulation games, and most of them prefer leading male characters to pursue girls. There are equal numbers of Otome game (players play as the girl to pursue boys) players as the Boy's love (players play as the boy to pursue boys) players. There are 9 Otome game lovers in this research, and two of them are heavy gamers (who had played over 7 games). Because the sample of the Otome game lovers is not large enough, I will focus on dating simulation game lovers' expectations for dating simulation games.

Out of 78 respondents, 39 people responded that they have previously played dating simulation games. 32 people considered the game narrative as the most important element in the dating simulation game. 30 people considered character design and illustration as the second most important component in the dating simulation game. However, since the data pool is not big enough it is hard to say if the narrative of the story is important than the characters' design. Dating simulation game is very time-consuming, so if the game narrative is not appealing

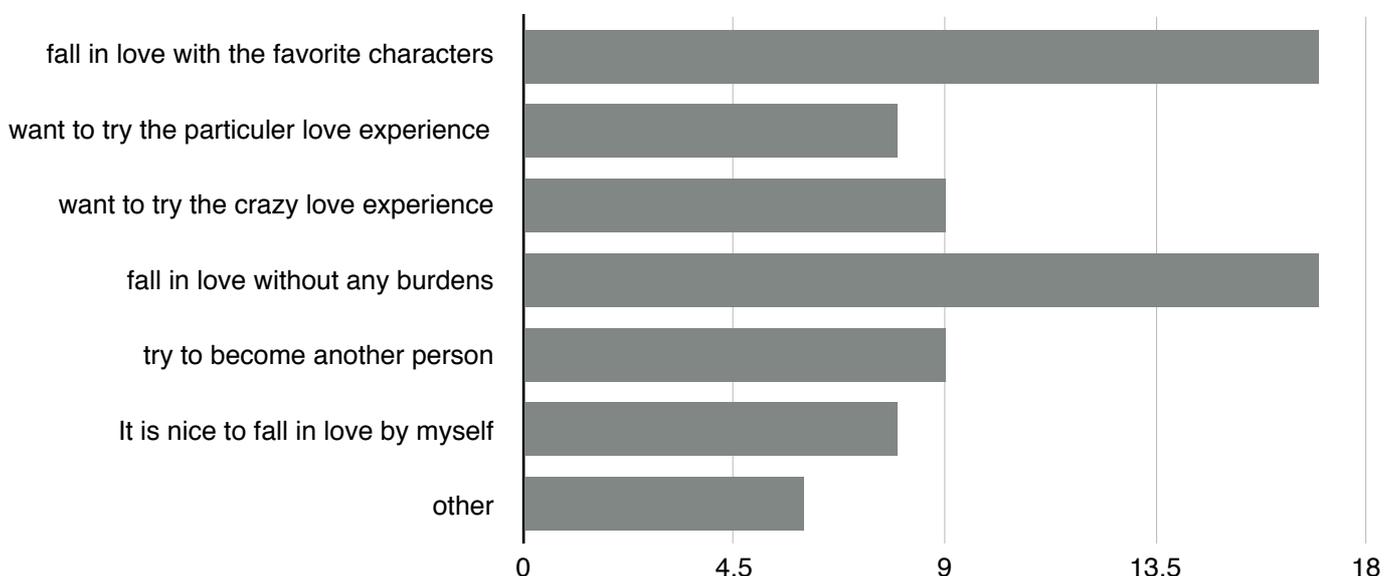
enough, players may not be willing to play or even willing to purchase the game. As a result, the best-selling games most likely have eye-catching storylines. For example, the game Hakuōki ~Shinsengumi Kitan (薄桜鬼 ~新選組奇譚) incorporates real historical characters and events into the game, and the players are able to experience romance with those historical characters and read actual stories related to them. Another example is Starry sky (スターリースカイ.) In the game, you can pursue 13 different characters represented by 13 different zodiacs, and every character has its personality and position, such as they may be your classmates or teachers. This fulfills the player's fantasy, that is, when the story meets people's imagination, people will be more likely to spend time on it. In particular, players from 20 to 25 tend to fantasize romance.

Most of the the reasons why players keep playing dating simulation games are that the players love to "fall in love with their favorite characters" and "fall in love without any burdens". Based on Tanikawa Misaki's research, players who choose to "fall in love with their favorite characters" can be categorized as the "reality" groups, which is the major type of customer in the Otome games market. In my survey, this type of players consider the character design as the most important element in dating simulation games, and this is same result as in Tanikawa Misaki's research.

Players who choose "fall in love without any burdens" can be categorized as the "wish" group, and this type of players are more inclined to be addicted to the game. In my survey, this type of players also considers character design as the most important element in the game, and the game narrative as the second most important element, which is same result as in Tanikawa's research.

To sum it up, if we want to design a VR version of Otome game, we would have to follow these directions: the game's

Chart 8, Why do you keep playing dating simulation games?



narrative should be appealing enough at least at first glance. For example, the relationship inside the game may be controversial or the elements of the games are unique. The storytelling can be designed as a more personal experience for the players. For example, the characters in the game can stare at players or call them behind. The art style of the game should fit the preference of the target audience, which may be difficult to find. There is a fine line 3D game must walk. The models need to be realistic enough to satisfy the player, but not too realistic that it falls into the uncanny valley. According to *Universal Principle of Design*, “Anthropomorphic forms are appealing when they are dissimilar or identical to humans, but unappealing when they are very similar to human”, that is when the three dimensional models are very similar to the humans, it may make people feel uncomfortable. As a result, the art style of the 3D model is also the important part when the game developer design the VR Otome games.

games or other type of dating simulation games usually are in two dimension, manga art style.

### Case study: Love Plus

Love Plus is a game designed by Konami Digital Entertainment Co., Ltd in September, 2009. Unlike the usual dating simulation games which focus on the process of pursuing the characters, Love Plus focuses more on the process after you become her boyfriend, That is, you will need to date her and hang out with her. It also provides a new way to interact with the player, such as, real time game play experience, sending texts, face recognized, understanding specific terms, specified your girlfriend with different virtual outfits, or taking pictures together.

### 3D v.s 2D

The biggest challenge of developing Otome games using Oculus Rift may be its three-dimensional graphic style. As I mentioned above, Otome games and other type of dating simulation games are normally text-based. According to Emily Taylor’s research, unlike other type of games which are designed in three-dimensional style with stunning visual effects, dating simulation games still remain in two-dimensional style. The first three-dimensions dating simulation game, Konagi’s Tokimeki Memorial 2 (ときめきメモリアル3, 2001) had unimpressive sales record which may discourage other companies to follow the lead. The reasons why the two dimensional graphic was preferred by the players for this type of game may be because two-dimensional graphics are more aesthetically pleasing than three-dimensional images, this can be proofed by the sales of the Tokimeki Memorial3. Furthermore, companies need to spend more money on developing three-dimension games than two-dimension ones. In Patrick’s study also pointed out that “Animation is costly and time consuming, and avoided by all but the largest makers.” [29]

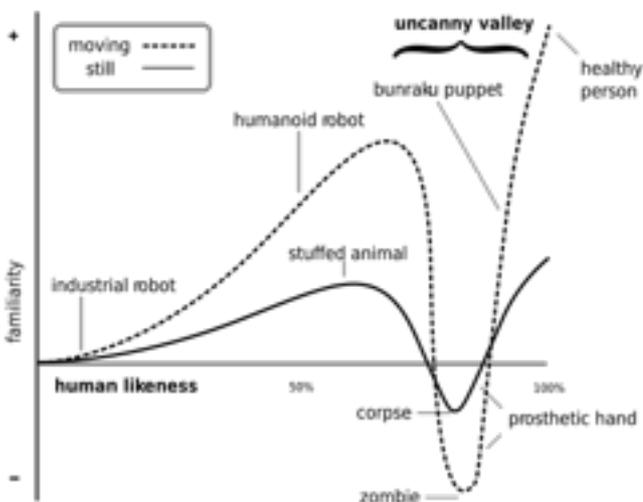


Chart 9, Uncanny Valley

### How to play?

The most usual way to play the Otome game is in the form of interactive fiction. Recently, more Otome games are remade into app versions including some famous Otome games, such as, Hakuōki ~Shinsengumi Kitan (薄桜鬼 ~新選組奇譚). It is considered a possibility to reach more players with the smart phone platform, and the app versions Otome games have been quite successful in Japan. [18] However, if we want to apply Oculus Rift to Otome game, we have to replace text-based narrative with interaction, since one of the most important advantages of Oculus Rift is replying more on interaction-based narrative instead of text-based. Another concern with using Oculus Rift to play Otome games is that the three dimension art style may not be accepted by Otome games lover. [19] Since the Otome



Picture 4, Tokimeki Memorial 3 with 3D model, which is looked not appealing enough at that moment.

However, the situation may be changed nowadays. Love Plus is a famous bishojo game, games that players play as the boy to pursue girls, which come out in 2009. The pictures below showcase the art style of the game. The game combines three-dimensional interaction with normal play and contained two-dimensional event pictures inside the game. This kind of change may have been caused by improvement in the quality of three-dimensional graphics or increase in player acceptance of the three-dimensional graphics. As I mentioned above, the most common players, Reality Players, are more likely to pay attention to the art style. However, at the same time, this kind of players is less likely to spend a lot of time on the same game. In order to keep developing new games to satisfy players' needs, companies may be more inclined to use small budget on a project. Since the budget is a critical constraint, it will be more difficult for companies to develop high-quality three-dimension dating simulation games.



Picture 5, Love Plus, Normal interaction with 3D model.



Picture 6, Love Plus, special event CG which players can collect.

The combination of two-dimension graphics and three-dimensional animation is a good way to mix the interaction and the art style perfectly. There are more and more text-based adventure games using this kind of interaction. For example, Ace Attorney, Pokemon and other handheld game console...etc. However, for the PC game, the majority still features the traditional way of game play.

**Interaction**

The advantage of three-dimensional model is that it offers players more freedom in interaction. Players can personalized their girlfriends with his preference, that is although there are only three heroin inside Love Plus, players can still getting the unique feeling from the game. Players use stylus to trigger the particular points on their “girlfriends”, and then the “girlfriends” will give them specific feedbacks. For instance, in a video shown on the youtube [19], the player can kiss his girlfriend through using a stylus to point around girl’s upper body. If the trigger is successful the camera will zoom in and step into next stage, and the final stage is the kissing scene. In the New Love Plus version, the game uses the camera recognizing function in 3DS. You can introduce your girlfriend to your friends and she will remember your friends. Furthermore, your girlfriends will recognize if it is you playing the game, that is, when another person plays this game, your “girlfriend” will notice that it is not you, this also bring the feeling of being unique feeling that players may feel themselves are really important to their virtual girlfriends.



Picture 7, Using stylus to kiss your girlfriend.

**Techno-intimacy**

Anne Allison introduced the idea of “techno-intimacy” in her discussion on Tamagotchi, which allows player to keep a virtual pet within a small portable device. “Techno-intimacy” is the closest feeling that can happen between man and machine. Intimacy can be developed through frequent daily interactions and the feeling of being important to something. For instance, when a kid keeps looking at their tamagotchi during particular a time period, this behavior can become a habit. When a behavior becomes a habit, people would start to internalize it to

become part of them, and this makes people addicted to the “thing”.

Another similar example is “Mushroom Garden”, an App that lets its user “harvest” mushroom during a particular time period and collects different species of mushrooms. As a result, the frequency of the connection can build up a feeling of reliance. Furthermore, the feeling of being important is also the key point to construct the intimacy feeling. For example, the regular dating sim may make players feel no different from other players, but inside Love Plus, players’ girlfriends not only look slightly different depending on the player, they also get angry if the player forgets to open the game for a long time. It just like a tamagotchi that not only make players establish a habit, but also make themselves thinking they are important to it. That is, it cannot live without the player. This kind of feeling is similar to the common expectations in a relationship, which are closeness and reliance. Furthermore, it also gets rid of the complicated part of the relationship, such as loyalty and compensation. The girlfriends inside is predictable and controllable which fulfills the urge for power of every human being.



Picture 8, Mushroom garden which force players have to build up a habit to look after them for certain time period.



Picture 9, Tamagotchi is popular to children.

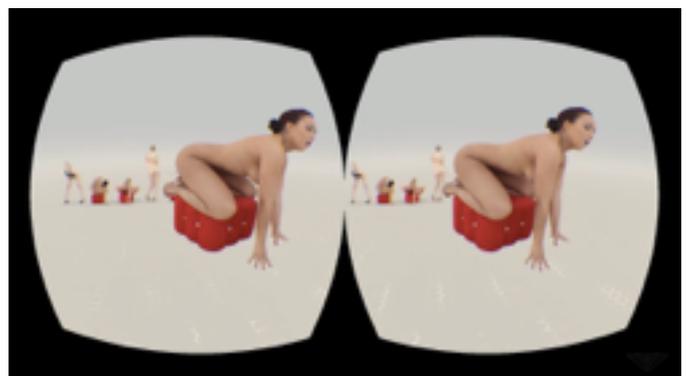
## HOW OTOME GAMES MAY WORKS WITH OCULUS RIFT

### Experience

When the idea of “Virtual Reality” comes to people’s minds, people may think that it is a great opportunity to experience unusual situations, such as a magic world, science fiction scenes or particular sexual experiences. For dating simulation games, people are likely to associate them with the sexual scenes. However, in an East Asian women’s mind, the feeling of “butterflies in the stomach” may not always have to be sexual.

### Porn with VR

Although it’s not directly related to Otome games, the experience of pornography with Oculus Rift gives people new ways to fulfill and release the sexual need. “The porn of the future is titillating. As virtual reality matures, we’ll be aroused in three-dimensional immersive alternative realities, interacting with super-lifelike porn stars customized to our taste. People will look back on our passive and lonely 2D smut and pity us.” Said Fruzina Eordogh.[24] There are a lot of porn companies trying to invest in virtual reality porn. Although everyone may not be into a virtual pornography product, it is no doubt that pornography is a market that will always exist. The sexual contents are usually appealing to the public, so it is not surprised that are so many companies are trying to get involved in the field. [31] For example, below is a demo made by Veiviev. In this demo, there are several virtually rendered naked three dimensional women in sexy poses. There is also a Japanese pornography company, PG Productions, they 3D scan their porn stars and put them into the Oculus Rift. [27] These all indicated the possibility of a future intimacy relationship between humans and AI. However, it also reminds us to watch out for the uncanny valley effect. As the pictures below, it may sometimes seems creepy. The art style of the 3D model may be a solution.



Picture 10, Lucid Dreams v2 by Veiviev, it seems creepy when viewers watch into her eyes



Picture 11, PLAYGIRLS by PG Productions, they 3D scanning their porn stars and adjusting with the 3D modeling software and publish it. The face of the model is also fall into uncanny valley

#### Summer lesson

Summer lesson is a virtual reality project for the Project Morpheus virtual reality headset made by Tekken Team and presented to the public on September 2014 at the Tokyo Game Show conference in Japan. In the game, you are a tutor for a high school girl. [22] The girl is modeled in anime style looks, but still looks very realistic. The anime style allows the model to escape from the uncanny valley.



Picture 12, Summer lesson

In this realistic looking room, you are attempting to take different kinds of actions to trigger the girl's responses. This game seems dirty for many people, but the appearance of this type of game is not really unpredictable. Virtual

Reality gives people an opportunity to experience something that is unlikely to happen in the real life. This experience fulfills people's unfulfilled wishes no matter how dirty it is. Just like porn, it gives people a way to fantasize. I believe that VR dating sim games is a new approach to fulfill people's unfulfilled wishes.

#### Kabedon

The example mentioned above is more related to a male heterosexual oriented fantasy. As a result, I started to consider what kind of contents for other sexual orientation is suitable with VR experience in order to make the game appealing to Otome games players. "Kabedon" is an action that is a familiar scene in the girls' comic in Japan. Kabedon is an action that a guy use one hand or both hands to force a girl on the wall.



Picture 13, Kabedon

Kabedon is originally from Japanese girl comic and has been popular within East Asia for the past two years. It been widely used in pop-culture elements such as drama and promotion. For example, Japanese clothes company GU had a promotion where they hired handsome guys to provide Kabedon services for their costumers.[21] This kind of action is considered a romantic scene in the girl comic, and many people would love to try this kind of experience. It may be seem incomprehensible to people who grow up in U.S. that why this action can be considered as a romantic action. However, if you read Japanese comics or watch Japanese (or other east Asian countries) dramas very often, you can find out the answer for it. The love and romance inside stories are usually indirect, especially when it comes to female's desire. Females are expected to conceal their love and they usually act more passive in the

stories. On the other hand, males are considered to be more aggressive in the romantic stories. As a result, East Asian women may be more attracted by aggressive men. The non-direct way to express their desires may explain why Katedon is popular among East Asian women.

Furthermore, women's hidden desires can also explain why Otome games are welcomed by Japan and other East Asia countries. In Otome games, women have the power to decide what they want. It is a release from the societal expectations of being controlled and being passive.

As a result, we can combine Otome games with VR experience to create a way for women to experience a particular situation. For example, I had designed a Katedon stimulation game with Oculus Rift. In that game, players will choose the model they would like to be katedoned by, and then they can start being katedoned. After choosing the guy they prefer, players get into the classroom. The classroom is a very usual and traditional Japanese high school classroom, and the orange light of the environment suggests that it is afternoon. The after-school empty classroom is a very typical scene in young romance games or anime. When players get in the classroom, they can hear the school bell ringing which I designed to make players feel more inside a Japanese high school classroom. Soon after players got into the classroom, the guy they had chosen would come over to you and then Katedon you. At this moment, if you are not looking at him, he would say, "Look at me", to force you look at him. After players staring at him for awhile, he would ask, "May I kiss you", but he won't let you answer. He will kiss you directly, and outside the Oculus Rift I would use a marshmallow to touch players' lips, and the whole experience ends with it.

The reason why I designed it in a way where the players can choose which guy they prefer is that being katedoned is a very intensive experience to the players. They should have the rights to choose a preferred partner. Similar situation happened when players are playing Otome games, they also have their rights to see which characters they would like to pursue. Players love to have the power of choosing. On the other hand, when players are inside the game, if they are watching somewhere else and not concentrating on the guy, the guy will command them to look at him. This gives players not only an intensive, but also a passive feeling. This design reverses the power of players and AI in the game. This kind of interaction is totally different from those in the original Otome games, since within two dimensional graphics you may not be able to feel the intensive pressure from the AI inside Otome games. This kind of intensive pressure can also make players feel more immersed in this particular scenario. In this example, players may really feel themselves being katedoned by a guy.

I also want my Oculus Rift experience to be an interaction between the real world and the virtual world for the players. That is, with the combination of real world feedback device (such as the vibration feedback with the Wii or other home

console) the experience inside the virtual world with the Oculus Rift will be more real and immersive.



Picture 14, Katedon simulation



Picture 15, Katedon simulation, choosing

Otome games are more complicated than this example but it gives us a taste of how the three dimension intimacy interactions will be like. Players' feedbacks are quite consistent in that they are all very impressed by how intense the experience can get, but the feelings of each person is different. Some people are very excited and have positive feelings with the experience but others thought it is very uncomfortable and offensive.

Furthermore, the style of the model also will influence players' reactions. For example, for players who are more used to and prefer Japanese anime style will be more willing to be katedoned by the school boy on the left hand side. However, some people will be more interested in muscle man on the right hand side. This is also coherent with the research that indicated the illustration style does really matter inside Otome games.

The virtual Katedon experience explains the reason behind why people would like to play dating simulation games, such as the wish to experience a totally different intimacy scene.

### Interact with the VR world

In Love Plus, players use stylus to interact with the AI inside the game, and the girlfriend inside Love Plus can also recognize the player. How can it be done with Oculus Rift? The typical interaction will be head movement that is the core idea of the Oculus Rift's experience. Players move their head and look around the environment, and they can stare or have a glance at something to trigger the events. For instance, in my Katedon simulation, players need to stare at the model for awhile to trigger the event. The reasons why I designed the staring interaction inside the game is try to simulate the feeling when you looks into someone's eyes. When people look into others' eyes, the interaction is subtle but strong. Although the anime style model may not works in this way, it still can provoke a similar feeling.



Picture 16, the model is staring at the player

Since Oculus Rift covers players' eyes, face tracking may not be accessible for computer. With the laptop, the players can use their voice to interact with the AI inside the games. The voice interaction is not a new thing in the game. For instance, in Ace Attorney 4 (逆転裁判4) you can use DS's microphone to use the blowing interaction in order to uncover the finger print. If the A.I. in games can understand the players' keywords, it can create a double sided conversation feeling, such as flirting or a compliment.



Picture 17, blow to see the finger print

The leap motion also provide another way to interact with the A.I. and environment inside the games. For example, you can play with an A.I.'s body or pick up items to throw at it or to give to it. The game made by Robert Yang,

Hurt Me Plenty, is giving us the example how the sexual content can be used with different kind of input method. "Hurt me plenty is a short game about spanking the heck out of some dude." " This a short game where you spank the heck out of a dude and learn about how BDSM communities attempt to formalize consent / caring." mentioned by Robert Yang, an experienced indie game developer.[25] In this game Robert use leap motion to sense gestures and hit the A.I.'s butt. It also provides a fresh relationship between A.I. and player. In this game, the A.I and the player's interaction is double sided, based on the interaction (which is hitting A.I.'s but) the A.I can decided if he want to keep the relationship with the players. However, the leap motion is not sensitive enough and it also very buggy for the developer.



Picture 18, Hurt Me Plenty

Kinect is a good input method to let players walk around inside the virtual world. For example, the player can move inside the classroom and interact with the characters or even scare them behind. Kinect also can capture a players'

image. 3D video expert Oliver Kreylos made a project that used three Kinects to scan a person and rendered him into a virtual place. Although it still looks glitchy, it caught the public's eyes. If people can feel themselves really get into the space, the experience will be more immersive. The article also said " Kreylos says that even though his limbs were a bit fuzzy during the experiment, due to the relatively low resolution of the cameras, the system's low latency allowed his brain to believe that the body parts really belonged to him, to the point where it felt natural to try to reach out and touch non-existent objects." When people can see the reference inside the game, such as their body or hands, it provide the visual hints that can trick the brain into thinking you are really inside the virtual space.



Picture 19, Kreylos's project

### **Construct the relationship**

The relationship within the virtual games is more tangible than the screen based games. That is, people seems to have more "body" interaction with the characters inside the games. However, I don't think it works as well in the mental aspect. These are the reasons I thinks why Oculus Rift may not works greatly with Otome Games.

First, Otome Games is very time consuming. The reason it's designed as time-consuming games is because it contain a large amount of narrative, and also after players spend some time in it they become more attached to the game. However, when it comes to Oculus Rift, a time consuming game may not be appropriate, since using the Oculus Rift for a long time may lead to physical discomfort and eye straining. [28]

Second, the feeling of intimacy may be diminished inside the Oculus Rift since the Otome games are more successful if it is available anytime and anywhere. For example, Love Plus used the idea of Tamagotchi, which you can play beside you, to make users attached to the games. However, it may not works with Oculus Rift, Oculus Rift is a huge headset with several cables, so it is hard for people to take it everywhere and as I mentioned above it is also not suitable for a prolonged period.

Lastly, the process of translating the content will be a barrier to expand the market. When we look to current Otome games, most of them provide Japanese voice over and translated texts. However, if we wipe out the texts, it means that players will have to understand the game by the voiceovers. That is, oversea players may have more difficulty in understanding the narrative without the aid of texts. It is not reasonable for an oversea agency to hire additional talents for voiceover and translation into local languages. Especially since some players may prefer the original voiceover. The strength of the relationship formed with the game depends highly of the player understanding the narrative. As a result, if the player cannot get the narrative at all, it is harder to for them to build up a close relationship.

### **CONCLUSION**

After discussing so many projects and devices, we can conclude that if we split Otome games into two part, one part is the feeling of excitement in response to the narrative, the other part is the feeling of closeness with the virtual characters. The combination of Oculus Rift with Otome games may work more perfectly than the traditional one, since the whole experience of a player interacting with characters inside a virtual world can be far more immersive than the traditional 2D platform. On the other hand, the Oculus Rift may fail to construct an intimate relationship between games and players, since it is hard to make player play it on a daily basis. However, if the Oculus Rift improve its portability, the situation might change.

## REFERENCES

1. "Oculus Rift: Step Into the Game", Kickstarter, September, 2012, <https://www.kickstarter.com/projects/1523379957/oculus-rift-step-into-the-game>
2. Luckerson, Victor, "Facebook Buying Oculus Virtual-Reality Company for \$2 Billion", Time, March 25, 2014, <http://time.com/37842/facebook-oculus-rift/>
3. Chan, Melanie, Bloomsbury Academic, *Virtual Reality: Representations in Contemporary Media*, January 16, 2014
4. Nathaniel I. Durlach and Anne S. Mavor, *Virtual Reality : Scientific and Technological Challenges*, National Academies Press, December 1994
5. Parkin, Simon. "Oculus Rift", *Journal MIT's technology review*, Volume 117. Issue 3. Page 50. Mar 15, 2015
6. Henry, Winchester, "How Oculus Rift works: Everything you need to know about the VR sensation", January 7, 2015, <http://www.wearable.com/oculus-rift/how-oculus-rift-works>
7. Oculus VR Best Practices Guide, Oculus VR, October 21, 2014
8. Alex, Colgan, "How Does the Leap Motion Controller Work?", How stuff works, August 9, 2014, <http://blog.leapmotion.com/hardware-to-software-how-does-the-leap-motion-controller-work/>
9. "Kinect for Windows features", Microsoft, <http://www.microsoft.com/en-us/kinectforwindows/meetkinect/features.aspx>
10. Stephanie, Crawford, "How Microsoft Kinect Works", How stuff works, <http://electronics.howstuffworks.com/microsoft-kinect2.htm>
11. Tompowsky, Roseanne, *An Exploration of Gender-specific Language in Japanese Popular Culture Gender Stereotypes in Japanese Dating-simulation Games*, Kandidatuppsatser, February 17, 2014
12. Emily, Taylor, *Dating-Simulation Games: Leisure and Gaming of Japanese Youth Culture*, University of North Carolina at Chapel Hill, 2007
13. Yamaguchi, ~トレンド分析レポート~ 『女性向け恋愛ゲーム』人気の理由に迫る, ~トレンド総研, June 23, 2014, <http://prw.kyodonews.jp/opn/release/201406231611/>
14. Akiko, Senoo, 女性携帯ユーザーの35.5%が「恋愛シミュレーションゲームで課金経験あり」と回答, MMD研究所, May 19, 2011, [https://mmdlabo.jp/investigation/detail\\_808.html](https://mmdlabo.jp/investigation/detail_808.html)
15. Misaki, Tanikawa, 乙女ゲームユーザーの分析, 静岡大学 工学研究科, 2013, [http://www.msi.co.jp/splus/tips/stuAward/2013pdf/muc13\\_tanikawa.pdf](http://www.msi.co.jp/splus/tips/stuAward/2013pdf/muc13_tanikawa.pdf)
16. Kazumi, Hasgawa, *Falling in Love with History: Japanese Girl's Otome Sexuality and Queering Historical Imagination*, Bloomsbury Publishing USA, October 24, 2013
17. 「オタク」市場に関する調査結果 2014, 株式会社 矢野経済研究所, October 31, 2014, <http://www.yano.co.jp/press/pdf/1334.pdf>
18. 乙女ゲームアプリ課金経験者は34% 乙女ゲームアプリ調査レポート, Appmart, July 28, 2014, [http://otalab.net/news/detail.php?news\\_id=3529](http://otalab.net/news/detail.php?news_id=3529)
19. 3DS-New Love Plus, [https://www.youtube.com/watch?v=xOsDT3mie\\_0](https://www.youtube.com/watch?v=xOsDT3mie_0)
20. Wei-Jung, Chang, *The sexuality of "BL fantasy" in Taiwan: A case study of Taiwanese Fujoshi's fantasy practice*, Ochanomizu University, March 31, 2013
21. William, "GU holds "Kabe-don" event at Ginza branch, hot guys trap female customers against wall", Japan Trends, December 9, 2014, <http://www.japantrends.com/gu-kabe-don-ginza-event/>
22. Matt, Kamen, "Bandai Namco unveils VR dating sim Summer Lesson", wired.co.uk, September 1, 2014, <http://www.wired.co.uk/news/archive/2014-09/01/bandai-namco-unveils-vr-dating-sim-summer-lesson>
23. William, Lidwell, *Universal Principles of Design*, Rockport Publishers, Inc., 2010
24. Fruzsina, Eordogh, "When Porn and Virtual Reality Collide (NSFW)", Gizmodo, November 20, 2014, <http://gizmodo.com/when-porn-and-virtual-reality-collide-nsfw-1660603261>
25. Robert, Yang, Hurt Me Plenty, 2014, <http://radiatoryang.itch.io/hurt-me-plenty>
26. Sharif, Sakr, "Oculus Rift user transplants his whole body into VR using three Kinects", engadget, May 14, 2014, <http://www.engadget.com/2014/05/14/oculus-rift-three-way-kinect-3d-video/>
27. "Playgirl", PG productions, <http://pg-production.com/index.html#about>
28. Eli, Peli, *Visual and Optometric Issues with Head-Mounted Displays*, The Schepens Eye Research Institute, Harvard Medical School Boston, Massachusetts, 1996, <http://serinet.meei.harvard.edu/faculty/peli/papers/Visual%20and%20optometric%20issues%20with%20head-mounted%20displays.pdf>
29. Patrick W. Galbraith, *Bishōjo Games: 'Techno-Intimacy' and the Virtually Human in Japan*, the international journal of computer game research, May 2011, <http://gamestudies.org/1102/articles/galbraith>
30. Jonathan, Strickland, "How Virtual Reality Works?", How stuff works, <http://electronics.howstuffworks.com/gadgets/other-gadgets/virtual-reality.htm>
31. Andy, Jones, "VR porn revealed: Why the future of smut is behind the headset", wearable, <http://www.wearable.com/vr/vr-porn-behind-the-headset-871>

32. “ The rise and fall and rise of virtual reality”,The Verge,  
<http://www.theverge.com/a/virtual-reality>
33. Adario, Strange,“Oculus Rift, Leap Motion mashup delivers a new kind of virtual reality interface”,  
Mashable, February 11, 2015, <http://mashable.com/2015/02/11/hovercast-virtual-reality/>