

## ***Environment Concept Design of 360° 2D Animated ‘Maiden Voyage’ For Fine Dining***

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### **Abstract**

The animation industry has helped develop an immersive and exclusive fine dining experience. Innovations are important to stand out from the competition in the market. Teams specializing in animation and culinary have specifically curated 'Maiden Voyage,' novel techniques with a 360° 2D animation for fine dining. A virtual reality headset or a head-mounted device allows restaurant guests to watch the animation while waiting for their meal between courses. The project's ultimate goal is to enhance the atmosphere of the elegant and formal restaurant setting through a virtual reality technique and narrative. The team intends to design a 2D environment concept for a cruise ship from 1912 for 'Maiden Voyage.' This environment design has to be distorted to align with the virtual reality blueprint on a 360° platform. Firstly, the research method starts by reviewing the literature on environment design. Next, observations from actual cruises in 1912 were analyzed, and experiments were drawn using a 360° blueprint. Lastly, conduct surveys on fine dining with 360° techniques with environment design. The research output is the environment design sheet, which will contribute to the 'Maiden Voyage' animation to let the audiences immerse themselves in the mystery narrative and experience a cruise in 1912. This research will have practical applications for future studies on 360° implementation and assessment of animation, interdisciplinary projects, and the advancement of new animation techniques in educational settings, particularly within university-level animation courses.

Keywords: Environment Design, 2D Animation, 360° Video, Fine Dining, Animation Study

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## Introduction

Video 360° is becoming more accessible in this modern society. Public viewpoints on 360° have found positive results from related research and studies. Lampropoulus, G., et al. (2021) argued that video 360° is effective in education, especially during the teaching and learning process, to engage the participation and motivation of the students. In the culinary world, Liu, S. et al. (2023) declared that fine dining restaurants strive in fierce competition as it is becoming easier to find in metropolises. Generation Y expects more of the atmosphere quality than food quality from a fine dining restaurant. Shah, Z. Q., et al. (2020) suggested that augmented reality technology and projection mapping can improve the fine dining experience. These findings provide new insight for the researcher and a challenge by utilizing video 360° in fine dining to explore its potential in the animation industry and the culinary world.

Acknowledging that combining animation and culinary as a creative and innovative method for dining purposes is challenging, Yohanes Merci Widiastomo as a story director and Christine Mersiana Lukmanto as concept design director collaborating with a professional in the culinary industry, Adestya Ayu Armeilia. Lukmanto, C. M. (2021) stated they have been working together since 2020 to create a projection mapping 'Si Dulang.' Lukmanto, C. M. (2023) mentioned that Siti Adlina Rahmiaty, who is in charge of Video 360°, was added to the team working on Maiden Voyage. The team will study how to effectively implement the head-mounted device and maintain an elegant and formal fine dining environment. This device will watch the animation while the guests wait for the food. The device would be removed when the guests receive their meal. This system is expected to give a unique and immersive fine dining experience.

The research team wants to create a thriller and mystery 360° 2D animated film. The story of a family dinner gone wrong, where the crime occurs during the birthday celebration, is a suspenseful story unfolding as the guests experience the journey of finding out who the culprit is. This project is also in honor of remembering the tragedy of the Titanic. The team wanted to create an environment for the audience to experience being on a cruise. According to the National Oceanic and Atmospheric Administration (2024), Titanic is well known as the largest and most luxurious shipwreck cruise ship in our current culture. This paper will focus on the environment design aspects of the 360° 2D animated film and how the guests will benefit from the fine dining experience. The literature review, Titanic documents, Titanic movie, and survey on 360° 2D animation will be explained, including the key findings and conclusion describing the challenges and limitations of Maiden Voyage.

## Research Purpose

This paper aims to showcase the environment design of Maiden Voyage, where the movie's setting is a cruise ship in 1912. This paper discusses how the environment design concept of a 360° 2D animation 'Maiden Voyage' enhances the elegant and formal restaurant. This paper will see whether the 360° virtual technique and thriller narrative can effectively bring a nostalgic feeling of being on a cruise ship in 1912. This discusses how the blueprint of 360° video plays an important role in designing the environment. The aim, incentive, and motivation is to create a creative and innovative 360° 2D animation packaged in the prototype of Maiden Voyage and to illustrate the environment design sheet of a cruise ship in 1912 in an artbook of Maiden Voyage. This research involves students from Universitas Multimedia Nusantara. It has the potential for practical applications for future studies on 360°

implementations within university-level animation courses, future research on 360° 2D animation projects, and the advancement of new animation techniques.

## Research Method

The research starts with reviewing the environment design literature, Titanic evidence documents, blueprints, and James Cameron's movie footage. Researchers will also collect data on environment design in 1912, cruise blueprint, present related studies, and previous research data collected during the first year of research. Next, the researchers will show the recce process to get a virtual reality blueprint on 360° platforms and draw experiments of distorted environment design to align with the 360° blueprints. The design team will make the visual concept with a 2D environment design sheet and create a 3D environment design. Surveying to get the key findings on the effectiveness of 360° techniques and how effective the environment design was in bringing the illusion of being on a cruise ship in 1912. Researchers will summarize, discuss the main findings, and conclude the environment design of the 360° 2D animation 'Maiden Voyage.' The challenges and limitations of this project will be provided in the paper for future research on 360° 2D animation projects.

## Data Analysis

Maiden Voyage is a project honoring the legacy of Titanic. The history of Titanic is so special because of its size, luxury, and tragic sinking. According to the National Oceanic and Atmospheric Administration (2024), Titanic was one of the biggest and most luxurious ships then. It has a grand staircase, elevators, a swimming pool, squash courts, a gym, a Turkish bath, and a barbershop. The ship is called an unsinkable ship because of the compartment doors that can be closed. Tragically, it sinks after hitting an iceberg less than three hours after its departure. Figure 1 shows how big and luxurious the Titanic is from Maritime Cyprus (2024).

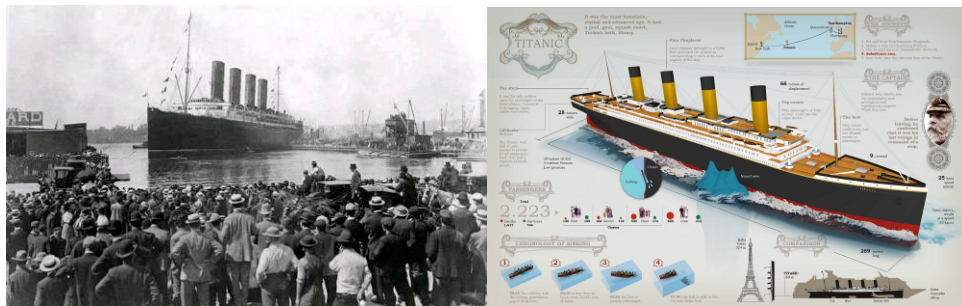


Figure 1: Titanic in 1912 and the Titanic Blueprint

The story takes place on a cruise ship in 1912. Titanic highly inspires this setting. The researcher is trying to return the nostalgic feeling; The vibes are historical and melancholic. Smathers, M. (2020) suggested that there are two big restaurants on the Titanic. One is A La Carte's restaurant, the top-tier restaurant on the ship that accommodates up to 137 diners. Another big restaurant is the first-class dining saloon, the second biggest restaurant on the Titanic. It could hold up to 554 diners and has 115 tables. It has a white wooden paneling wall with inner leaded-glass windows and blue, red, and yellow linoleum tiles. Some of the pictures below in Figure 2 are from Titanic Fandom (2024), Titanic (1997), The Legend of the Titanic (1999), Titanic: The Legend Goes On (2000), and Family Guy (2015).



Figure 2: Moodboard of Titanic in 1912, Titanic Movie and Animated Movies

Titanic used many variant Victorian elements and patterns on the ceiling, wall, and floor. They used them as decoration to make the cruise ship look big and luxurious. The floor from Smathers, M. (2020) in Figure 3 shows the details of the First-class Dining Saloon on Titanic. The stucco on the ceiling emphasizes the interior design, making it look classic and modern.

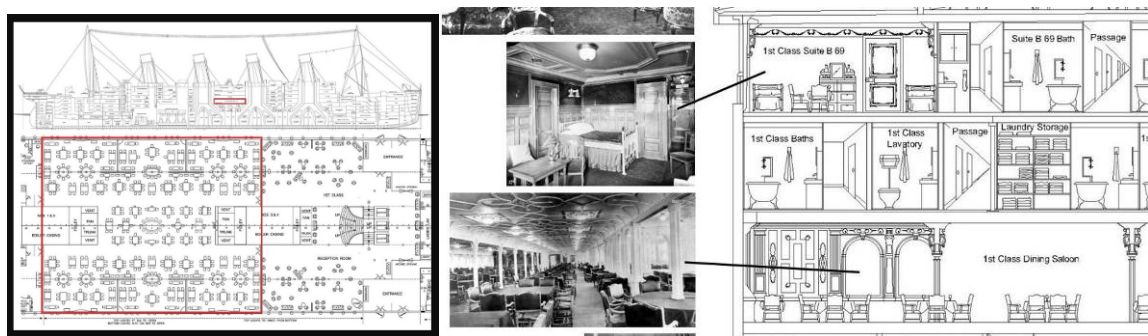


Figure 3: Floor Map and Details of the First-Class Dining Saloon

According to Aurora Studio (2024), the windows are painted white, giving the impression of a seamless design compared to the walls, and they are big, making it look more elegant and luxurious. The main color of the carpet is blue and red with a pattern and yellow as the accent of the pattern, as shown in Figure 4.

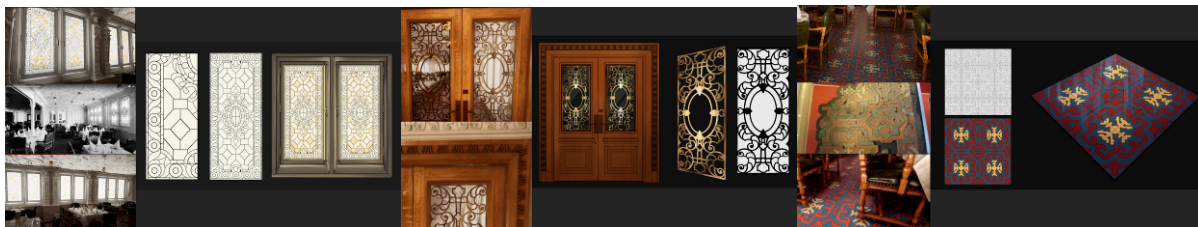


Figure 4: Element and Pattern Details of the First-Class Dining Saloon

## Environment Design Concept

On some big and luxurious cruise ships, the passengers are divided into classes, such as first class, second class, and third class. Each class has different facilities and different access to restaurants. Richards's family is considered of higher classes; therefore, the setting is at one of the greatest restaurants on a cruise ship in 1912. References from data analysis are very



helpful in creating the interior of the ship. As mentioned before, this environment design is strongly referenced in a ship called Titanic.

During the dinner, Richard suddenly dropped to the floor until everyone realized that he had lost his life. This is where the mystery starts when they are trying to look for the person responsible. The table seating is very crucial in giving away some clues. Richard sits at the corner of the table while Virginia, the wife, and Dorothy, the daughter, sit on the left and right sides, respectively. Next to Virginia is Richard's brother and a business partner couple. Next to Dorothy are Hebert, Lilian, and Lois. Everyone is the suspect because they all have the motives to harm Richard. However, they also have their alibi. Before the recce process, the researchers have to look at where Hebert will be sitting at the table because the camera will be placed on his seat to get the blueprint of Hebert's point of view. This will allow the audience to be more immersed in this mystery and thriller narrative.

One important set in the Maiden Voyage film is Richard's birthday dinner, where all the characters gather at one big table to celebrate. This dinner is a family dinner, and Herbert is introduced as Dorothy's boyfriend. The audience is expected to experience what Herbert is going through at the dinner by using his point of view. Richards's table is in the corner near the windows. It gives the idea of a more intimate and excluded dinner. The audience can see Richard's entrance coming over to the dinner table, and everyone is clapping to welcome him warmly. Figure 5 shows the characters' table seating and the location of Richard's table.



Figure 5: Table Seating and Floorplan of the Table in Maiden Voyage

To make environment design easier to get the right perspective, the design team uses 3D modeling as a guide. By looking at the floorplan, the team created the interior set of a ship and properties that completed the look of a cruise ship in 1912. To create the restaurant building, the team starts building walls with huge windows on the side, as seen in Figure 6. According to Titanic, some pillars are inside the restaurant, and the tables are lined up perfectly. For this project, the team created the modeling that will be seen on the screen.

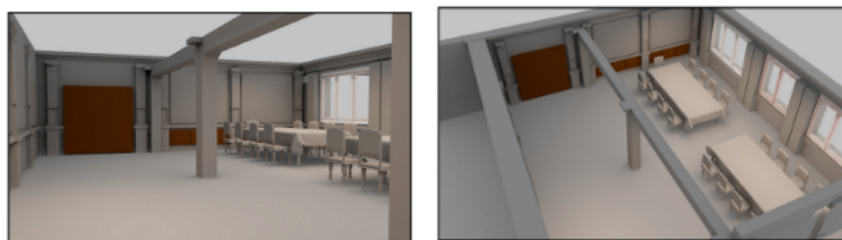


Figure 6: 3D Modeling Environment Design for Maiden Voyage

Recce is the filming process using a camera 360° to achieve the blueprint of a distorted environment. The height of the camera 360° has to be at the same height as the height of the character's eye level. At this stage, the actors and actresses sit at the table according to the character they portray. They also act according to the scripts given. This footage would later be used as an animation guide. Recce filming had to be done a few times before getting the right footage the team aimed for. At first, the team struggled to set the best resolutions for 360° on the head-mounted device. The team needed to make sure the image resolution was not blurry or jittery. From here, the movie creator will do the drawing experiment with 3D modeling.

The filming footage is injected into the head-mounted device to get a shot like the first picture in Figure 7. This blueprint is very helpful in laying out the character sitting on the table by tracing. Next, the team does the hand drawing experiments on top of the 3D modeling. Some room layout adjustments need to be made by comparing the 3D modeling and the footage. The animation process is shown in the second-last picture in Figure 7, where the stacked drawing is shown. Later, it will go through the clean-up process by refining the rough sketches. The design team needs to ensure the characters' proportions and the environment is the same as those shown in the recce by checking it via the head-mounted device regularly.

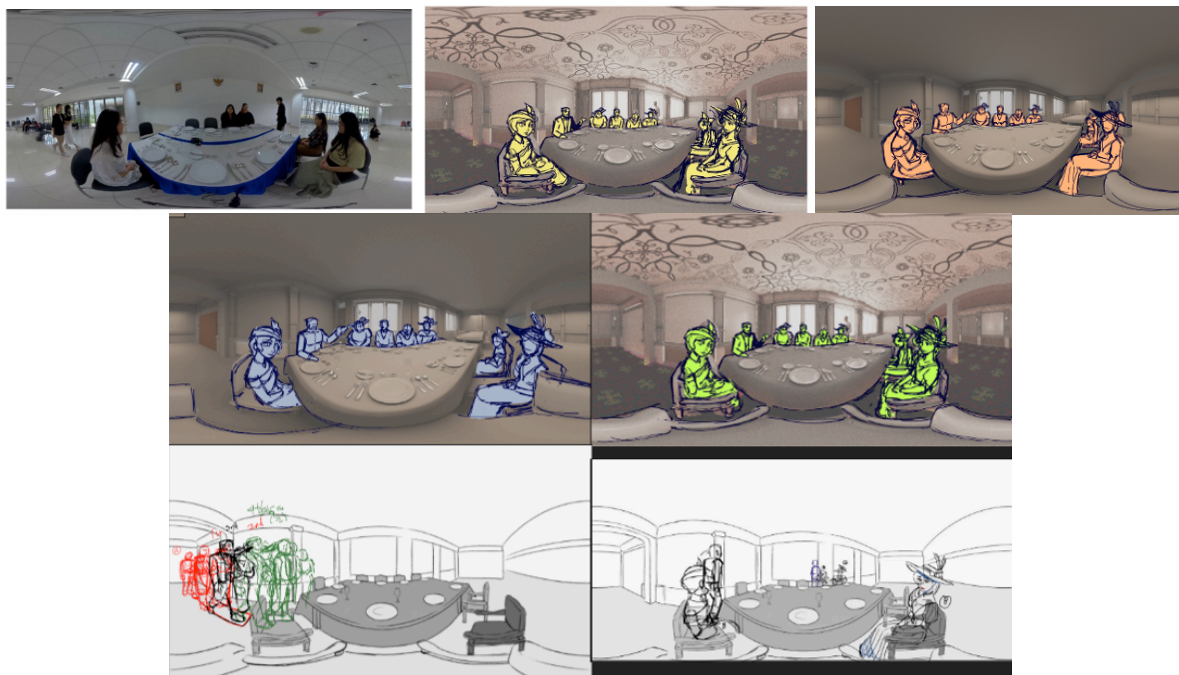


Figure 7: Table Seating and Floorplan of the Table in Maiden Voyage

The last step is to draw the environment design displayed in Figure 8. In this stage, the design team pays attention to the details by drawing lamps, elements, and patterns of the wall, stucco, and floor. The set's color and properties use earth tones with a vintage filter to create the illusion of a cruise ship in 1912. The carpet's color accents the design while using a different color tone from the rest of the environment.

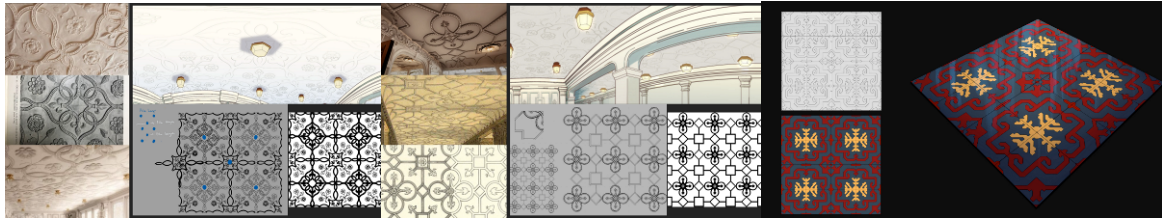


Figure 8: Details With Elements and Pattern of Maiden Voyage

Figure 9 illustrates what the environment design looks like in the prototype of the Maiden Voyage animation. Based on Hebert's point of view, the audience will see Dorothy sitting on their left side and Gillian on their right side. The audience will be able to participate in the story as if they are really on the set. This will enhance the atmosphere of a cruise ship's elegant and formal restaurant setting in 1912 through a virtual reality technique and narrative, making it a more immersive experience for the audience.



Figure 9: Final Look Environment Design of Maiden Voyage

## Research Findings

Conducting a survey tells the research key findings on whether the environment design effectively gives audiences the illusion of feeling they were on a cruise ship in 1912. The survey is taken after completing the prototype of Maiden Voyage. The prototype is only the first scene of the whole animated film. This graph in Figure 10 illustrates customer satisfaction with the setting on a cruise ship in 1921, with 60.9% of respondents giving a rating of 5, and many respondents thinking it is a suitable design for the project, with 56.5% of respondents giving 5.

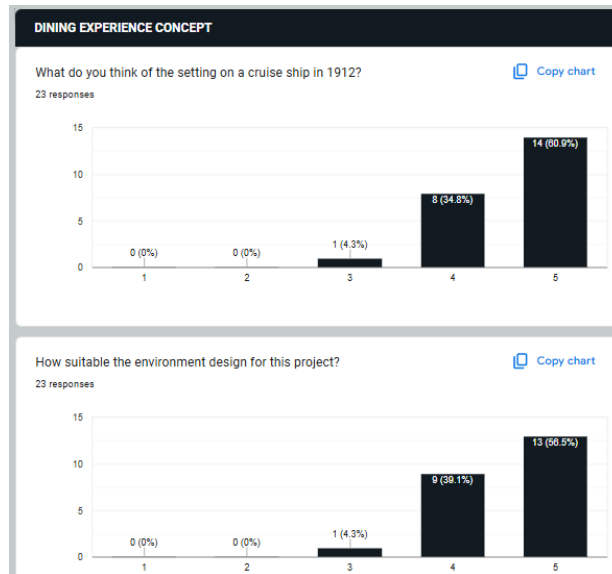


Figure 10: Survey on Environment Design for Maiden Voyage

In the survey presented in Figure 11, there is a question about how the audience feels about the design concept and how the team designer can improve their design. Some argue that the environment design gives an antique feeling, looks fancy, and has historical, Western, and Victorian vibes. However, the correspondents also mentioned that adding more lighting, shadows, and property can improve the environment design.

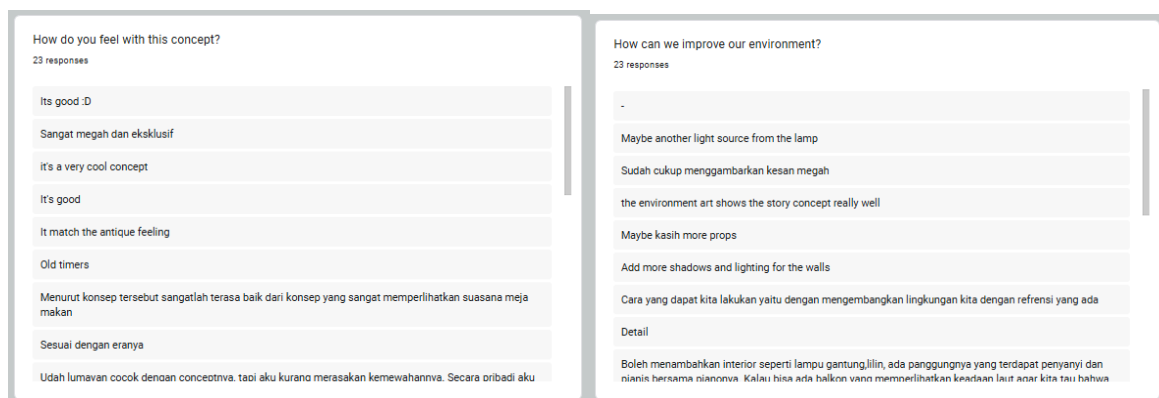


Figure 11: Survey on the Effectiveness of Environment Design of Maiden Voyage

In terms of the 360° technique, based on the previous proceeding by Lukmanto, C. (2023), Figure 12 displays that most of the respondents enjoyed the animation and the technique for fine dining as it is new to the industry and has a nice approach to enhancing the fine dining experience. However, it might not be effective for people wearing glasses as it can make them feel dizzy.

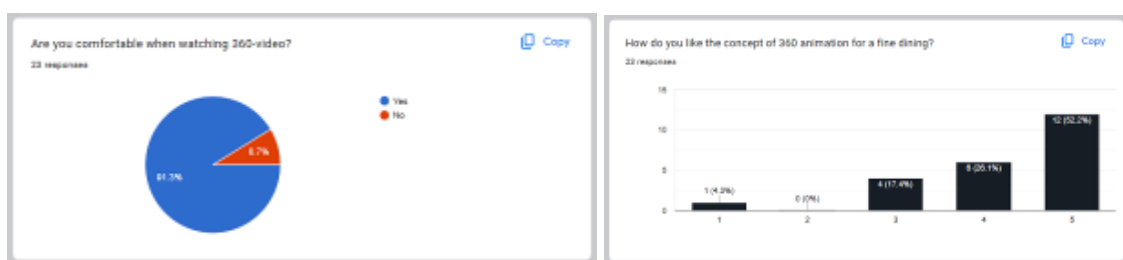


Figure 12: Survey on the 360° 2D Animation for Maiden Voyage



## Conclusion

Maiden Voyage research has been an interesting and challenging journey with some trials and errors along the integration of fine dining. The survey on environment design and using 360° techniques in fine dining has proven this promising innovation to the animation industry and culinary world. It has the potential and significant contribution to pave the way for the wider use of future studies on 360° implementations within university-level animation courses, future research on 360° 2D animation projects, and advancement of new animation techniques.

Data collection by reviewing the environment design literature, Titanic evidence documents, blueprints, James Cameron's movie footage, environment design in 1912, cruise blueprint, present related studies, and previous research data are very effective in getting the details right to bring back the cruise ship in 1912 come alive. However, collecting data on the specific ornaments of the Titanic is quite hard to find. The recce and drawing experiments are crucial in the environment design process to tailor the design to the mystery and thriller aspects of the animation. This project achieved the research output, which included the prototype of Maiden Voyage and the environment design sheet of a cruise ship in 1912 in an artbook of Maiden Voyage.

This project has some limitations on the 360° appliances that support the performance. Advanced technology is needed to adjust the 360° camera and the proportion of the character to the environment easily during 360° filming with a camera during a recce session. Head-mounted devices have limited features to adjust the proportion and image on the scene. Another thing lacking during the process is a room designed for the project to make the recce and prototype process accessible anytime. One of the shortcomings of this project is that the research team has not decided on the menu for Maiden Voyage fine dining. The menu is expected to give some clues; however, the fine dining menu has not yet been set due to time management issues. Thus, this can be something to consider for future research on animation for fine dining.

For future research, it is best to consider paying more attention to detail to create an environment from 1912. A virtual reality blueprint on a 360° platform is useful for creating environment design. However, it is more useful during the animating process as the distortion blueprint can adjust the timing and angles more easily. Details on the elements, ornaments, and patterns are crucial to get a satisfactory result. Based on the key findings from the survey, even though some respondents find the environment design likable and considered successful in bringing a nostalgic feeling of being on a cruise ship in 1912, some argue that the head-mounted device is not user-friendly for people with glasses.

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