Project Deliverable D: Conceptual Design

Group B17

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October 3rd,2019

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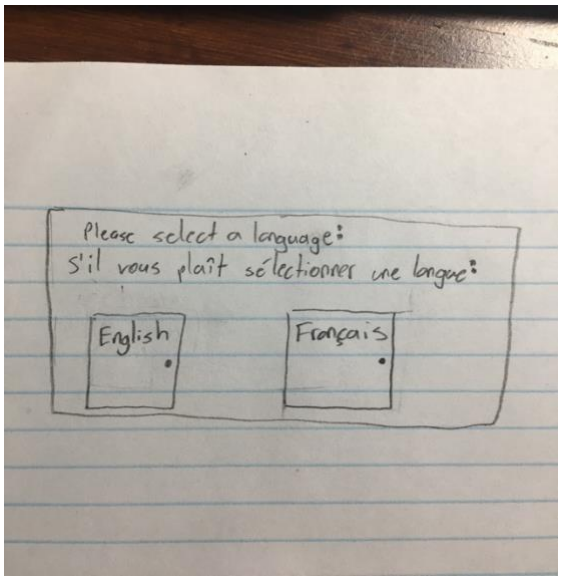
1. Introduction

The group interpreted the needs of the client to determine a problem statement, to develop design criteria, and to use that information for benchmarking. We will use our problem statement to develop a set of conceptual designs based on benchmarking and the list of prioritized design criteria that we have developed. Analysis and evaluation of the conceptual designs will be made in order to choose one global concept for further development in the latter stages of the project.

2. Program is Bilingual

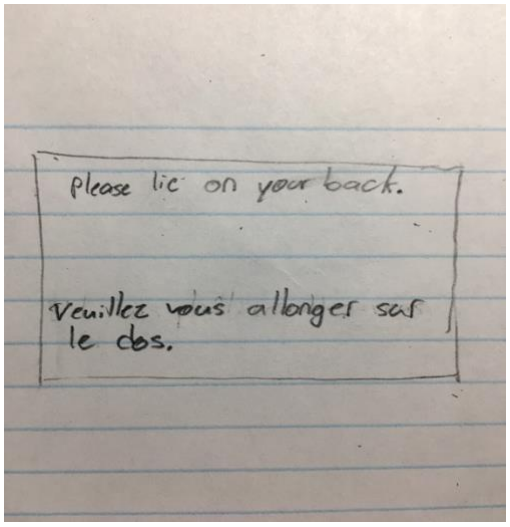
- If French and English versions of the video are given, make the program so that the patient is able to select which language they would like the simulation to be in.
- If only an English version is given, include translations with subtitles.

Bilingual Program #1:



If the videos are available in both English and French, the patient simply has to select the door that says their preferred language.

Bilingual Program #2:

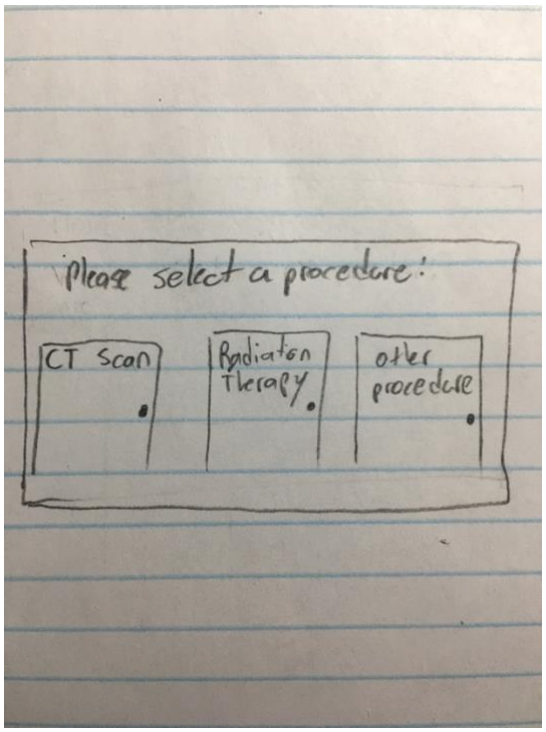


This is what it would look like if we were only provided with an English version. The words in English are text or audio provided by the client, and the words in French are text that we must put into the program ourselves.

3. Program is Easy to Use

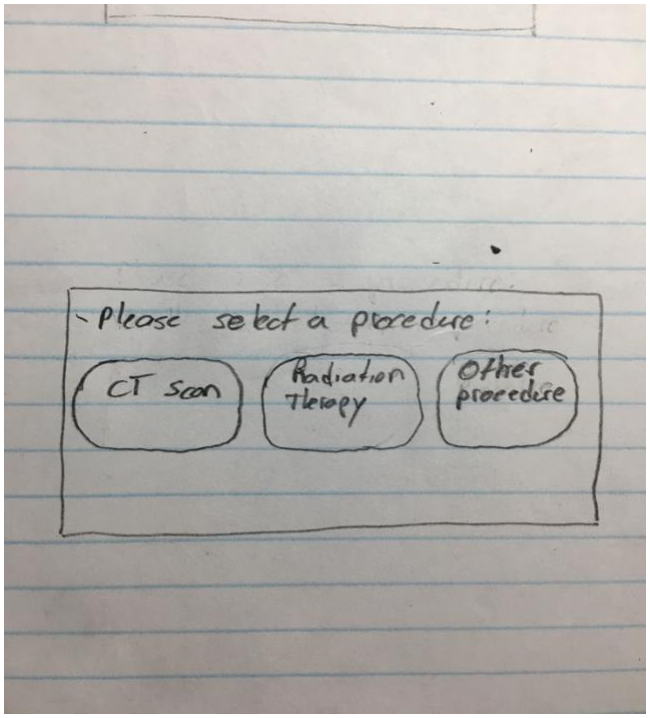
- Menu layout must be simple for patient to be able to select what they want.

Easy to use program #1:



An option for the menu is to make it look like a hospital waiting room where the patient selects a door for the type of procedure they would like to learn about. This option would make the experience even more realistic for the patient. French subtitles would be placed accordingly.

Easy to use program #2:

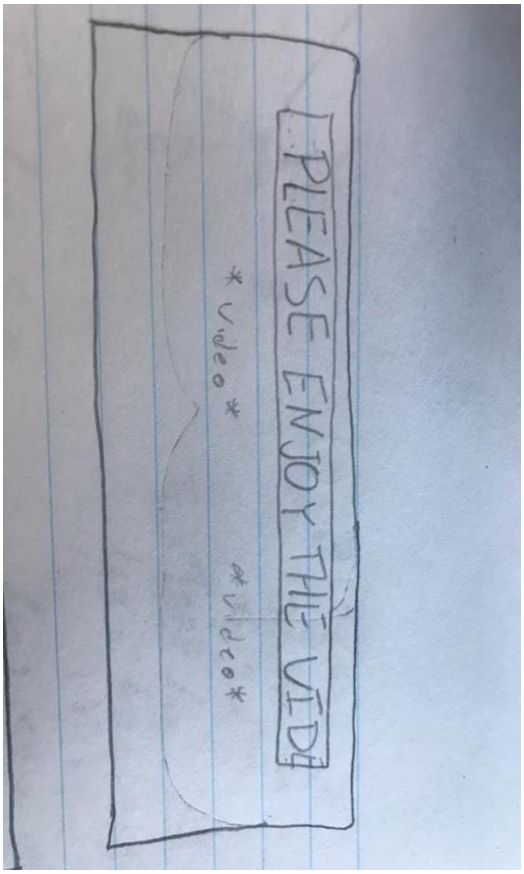


Another option for the menu is to make a creative background with the options for the procedures placed in bubbles. This option would perhaps make the experience less intimidating or more attractive for the patient. French subtitles would be placed accordingly.

4. Including Textboxes in the Video

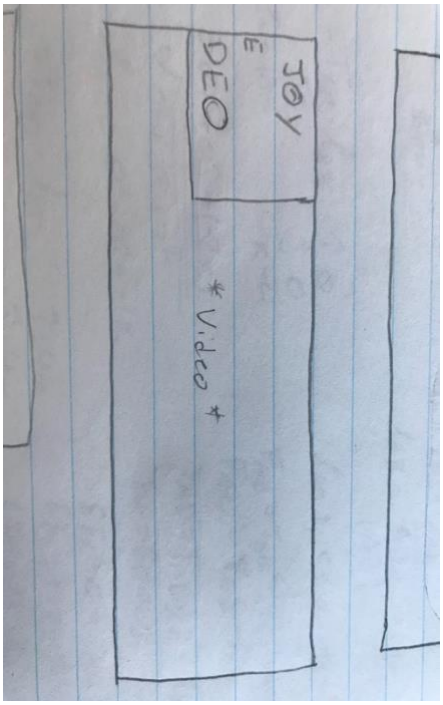
- Textboxes would be included separate from the video to inform the patient of what is occurring, or giving them directions on how to conduct themselves, or to control the video.

Including text boxes in the video #1



Text would scroll along the top of the video from left to right as the video plays, this would allow the user to remain focused on both the video and any necessary instructions.

Including text boxes in the video #2



The text boxes would remain in a fixed location as the patient looks around with the option to fixate on the text box, this would allow the user to either choose to fixate on the video or the instructions in the text boxes.

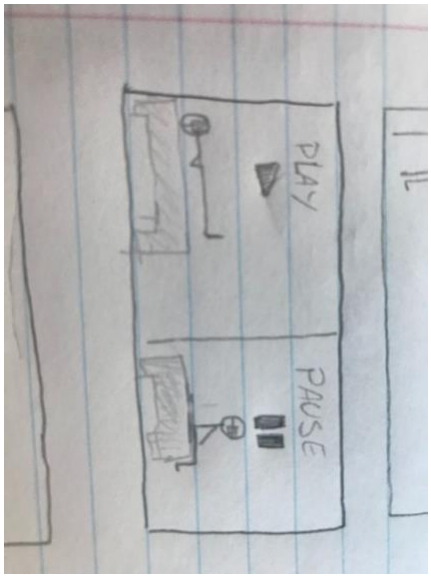
5. Patient and Doctor can Control the Experience

While the video is playing the user as well as the doctor can control the video with simple commands such as play/pause and fast forward/rewind

Patient and Doctor can control the experience #1

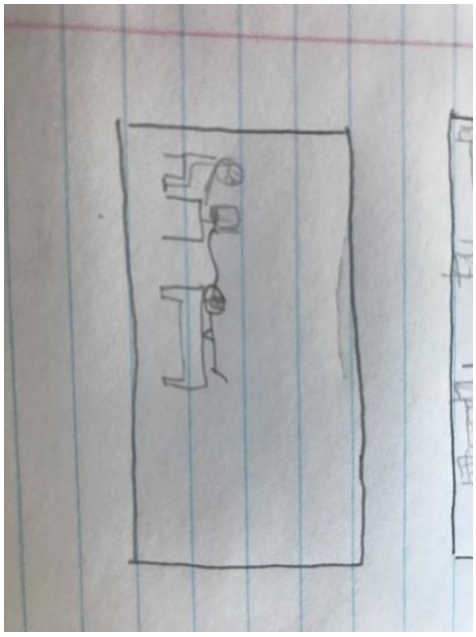
The patient can control the video from a miniature remote connected to the headset, this will allow the patient to remain in control of the video in a very simple manner. The program is suitable for all ages.

Patient and Doctor can control the experience #2



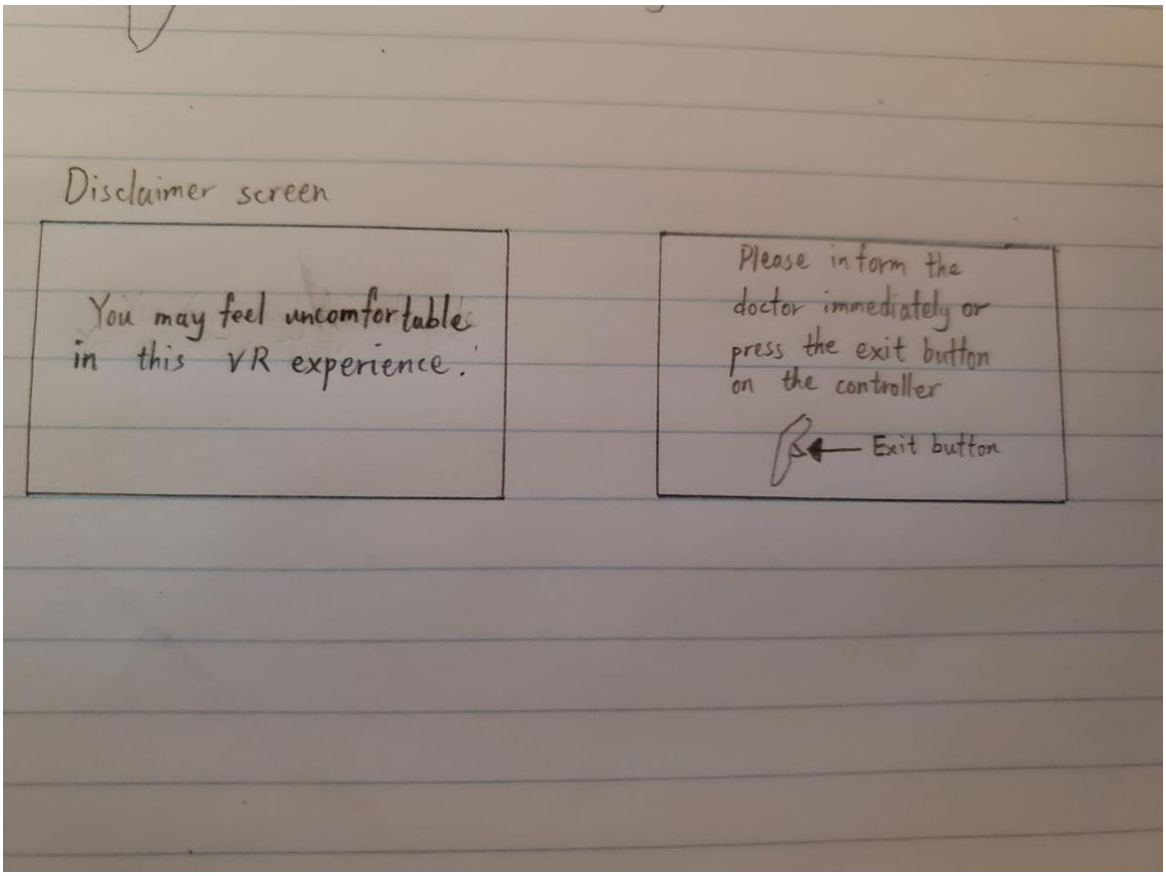
The patient can play or pause the video by sitting up or laying down, this allows the user to remain in control through a simple motion. This way they can remain in control of the VR experience as well as remain in the environment outside the video.

Patient and Doctor can control the experience #3



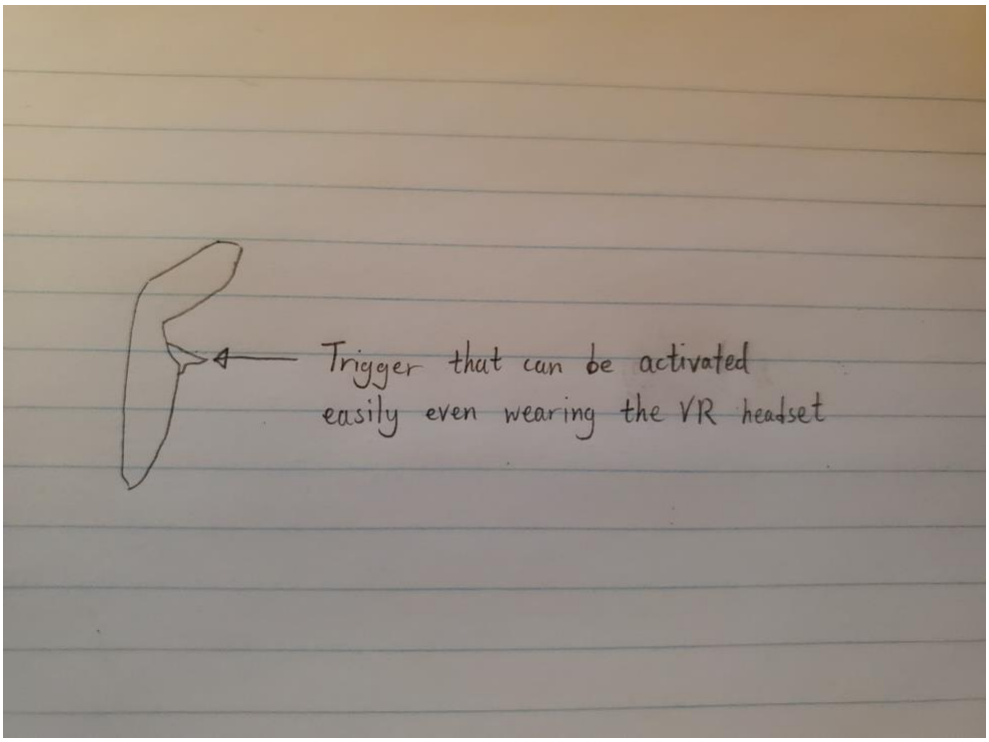
The doctor can control all aspects of the video from a computer connected to the headset, this allows the patient to stay fully immersed in the video while also allowing the doctor control in case of emergency or if they need to communicate with the patient.

6. Disclaimer



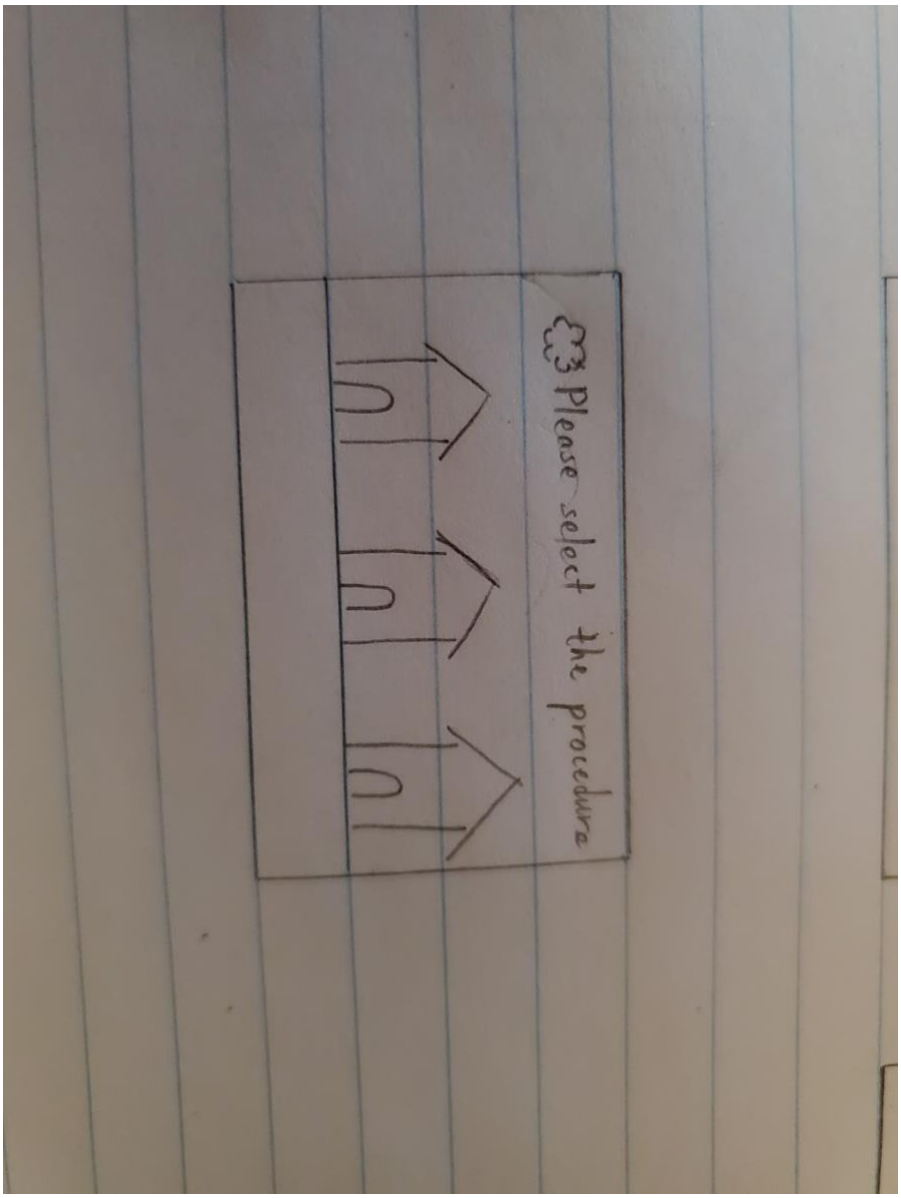
Before the video is being played, there will be a disclaimer screen that shows safety warning to the patients who are using the VR headset. Patients have to know that it may be uncomfortable when watching the video and they should take the headset off or exit the program immediately if it occurs.

7. Patient can Exit if Uncomfortable



When the videos are being played, one of the buttons on the controller (button that is easily accessible will be chosen) is set to be the exit button, which allows the patients or the doctor to exit the video/program immediately if the patients are not feeling comfortable in the VR experience.

8. Different Scenes for Different Ages

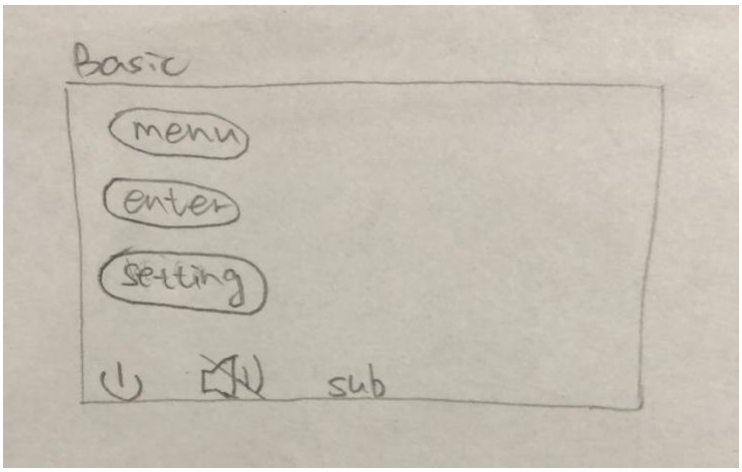


Example of a different theme for the menu: To let younger patients not to be afraid of the VR experience, the interface can be made different. Rather than setting the menu similar to the waiting room in the hospital, it can be set to other themes. Also, background music can be added to let them feel relaxed and comfortable in the VR experience. The different interface will be changed by the doctor when needed.

9. Low Cost Product

The product is better to be low cost if compared with another similar interface application.

10. Basic and Simple Interface



The interface is the basic level of visuals. The use of program is simple and clear in appearance and easy to use and control for both doctor and patient. It only contains the emergency shut down button, mute button and the other four options which are bilingual, disclaimer, subtitle and different scenes for different ages. Therefore, the application is not complicated to use, and it could be done in low cost software.

11. Final Design Conclusion

We analyzed several concepts for different subsystems which we included in design criteria such as : bilingual, easy to use, subtitles, patient and doctor can control the experience, disclaimers, patient can exit if uncomfortable, different scene for different ages, low cost product, basic and simple interface. The patient can select the language they want to hear and see in subtitles in the main menu and the menu is simple and clear in visual and use. The doctor and patient both can control the experience easily and when there are emergency situations, they can exit and shut down the program immediately by pressing the exit button. The VR experience should be suitable for different ages since it contains different themes and background music. We must now proceed with designing the medical simulation using Unity3D.