GNG 1103 Technical Report

Deliverable D: Conceptual Design

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Introduction

Our team has previously identified all the needs stated by the client and created interpreted needs. With those, our team came up with design criteria which was then used for benchmarking. We have then determined a problem statement from the client interpreted needs. With this information our team will now create conceptual designs and determine which is the best to use for our project. Our team intends to create a software that will be highly adaptable and easily configurable for use with different procedures throughout the hospital.

The virtual reality platform will be composed of three main subsystems: the *menu, the controls, and the audio/visual instructions*. After understanding the customer's needs and coming up with specific design criteria, we analyzed how the menu would be created using Unity. The menu needs to be as simple as possible, and at the very least it needs to be compatible with Oculus Quest, which is used by the Ottawa Hospital.

Introduction

- 1. The Design
 - 1.1. Subsystem: The Menu
 - 1.1.1. Designs
 - 1.2. Subsystem: The Controls
 - 1.2.1. Designs
 - 1.3. Subsystem: The Audio/Visual Instructions
 - 1.3.1. Designs

Conclusion

1 - The Design

1.1 Subsystem: The Menu

Design 1 and 2 - Matan Zelikovitz:

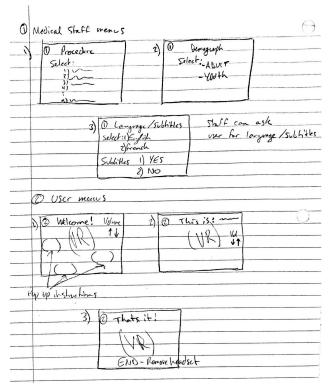
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Description - Design 1:

In each 'clip' the circled number corresponds to the person currently using the menu. (1) for the medical staff, (2) for the User. The number beside the clip to the left indicates the succession in which the clips will be displayed, 1), 2) etc. The first design has the medical staff selecting the procedure, followed by the demographic, in which a unique menu design will be created for the specific user (Youth/Adult). The procedure and specific menu choice has been selected by the medical staff. Now the VR headset will be handed to the User, in which they will see a welcome screen which includes a language and subtitles selection. This clip will be followed by the client, containing instructions and volume control selection.

Description - Design 2

Similar to that of design 1, the initial menu for the medical staff in design 2 will propose the demographic selection first, followed by clip 2; the procedure type. The Users' menu is quite the same as in design 1, though after selection of language and subtitles the user will see a welcome screen. This welcoming includes the procedure name and its description, all during the first minute or so of the video provided by the client. Throughout the video, instructions or notifications will pop-up notifying the user of time remaining or certain activities (instructions) based on the procedure.



Design 3: Description:

Similar to design 1 and 2, this design has the medical staff select the language and subtitles for the User, which may be helpful for Users that are be disabled. The User will receive the headset and see the welcome screen, which will have popup instructions and volume control. Through the video, descriptions of the procedure will pop-up and inform the user of current activities. A final notification will mark the end of the procedure and an instruction to remove the headset.

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Subsystem #1: Menu (Omar EL Kady)

Concept #1: "Start Menu"

Description:

This is a concept for the start menu. The start menu will be the first display seen by the patient after wearing the headset. The start menu will be as simple as possible, whereas the components of this menu will include only three buttons: the "PLAY" button to start the virtual simulation, the "VIDEO SELECTION" button to open a window with various videos for different kinds of treatments for the patient to choose the desired video from, and finally the "QUIT" button to kill the program and end the process. In this concept, The patient will have control over everything including when to start the simulation, which treatment video does he/she wants to watch, etc.

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Concept #2: "Tools Menu" (Omar El Kady)

Description:

This Concept of the tools menu will be present while the video simulation is playing. This tools menu will disappear when the patient is inactive. The tools menu will reappear if the patient presses a button on the hand controller, wait for him/her to select an option, applies the command on that specific option, and disappears again after a duration of inactivity.

This Tools menu contains the basic commands needed by the patient to easily control the video. The bottom menu includes: "Fast Forward (for 10 seconds)", "Rewind (for 10 seconds)", and "Pause/Play" buttons.

The top menu is divided into two sectors: the upper right sector that controls the Volume Percentage, and the upper left sector that allow the patient to quit the simulation at any time.

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*	C	Concept * 3 Omar Elkaby
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-	*	please say the voice command "Quit" to end the program
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2		
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2		to seconds Fast Porward, please say " Quit" to quit
1		simulation and return to the mash presu
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Concept #3: "Voice Menu" (Omar El Kady)

Description:

This menu is fully voice functioning, whereas, the patient will say commands rather than selecting them. This menu consists of two parts representing the start menu where the patient will say what video he/she wants to see, and say "Play" whenever ready. And the other part is the tools menu; after the start of the simulation, the patient will be given other voice commands to use such as: "Pause", "Play", "Fast forward", "Rewind", "Quit", and "Volume Percentage". Saying one of these commands will execute them.

Menu (Dhara)

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			B: Oson (patient)
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Concept 1:

The subsection menu needs to be as simple as possible so that it is less complicated for the users to navigate and does not add to the stress. The image above image shows how the menu will be designed. The first slide of the menu is the same for all three designs. The medical personnel (described by letter A in the image) will control the selection of the treatment. Once it is selected, the second controller will be given to the user. The user will see what is drawn in the second slide and show on. Here, they will get to select the language, then age, subtitles/audio, etc. Depending on the selection of the age, two different versions of the menu will appear, though both will have the same options, the youth version will have cartoon characters and funky letters. Once, the video is over the screen will show the home screen.

Concept 2:

The difference here is that the medical personnel will control the language selection as well the age selection. This way when the user puts on the VR headset, they will directly see the appropriate menu that begins with the selection of subtitles or audio, and setting of volume as seen in slide number 4. The rest of the slides will follow consecutively until the home screen appears.

Concept 3:

The medical personnel will select the language, treatment and age selection before handing the VR headset and controllers to the user. However, the difference here will be after slide 4, there

will be one more platform which will briefly explain the particular treatment and give instructions before proceeding to the rest of the slides. This way, the user will be informed about the procedure and prepared for the simulation. At the same time, if there was a problem with the treatment selection such as wrong treatment was selected, the user can tell the medical personnel about the mishap.

Menu (Sean):

- Concept 1: 4-phase
 - -Phase 1: The user opens into a bilingual welcome screen and selects a language.
 - -Phase 2: The user chooses the procedure, kid/standard mode, captions, can begin.
 - -Phase 3: The user is shown the video. No on-screen menu, but they can open a pause menu to change settings, rewind, exit to menu, etc.
 - -Phase 4: The user can select to replay, return to menu, or exit.
- Concept 2: 7-phase, one-by-one
 - -Phase 1: The user opens into a bilingual welcome screen and selects a language.
 - -Phase 2: The user can toggle captions. (They can always go backward.)
 - -Phase 3: The user chooses kid/standard mode.
 - -Phase 4: The user chooses the procedure.
 - -Phase 5: The user reviews their choices. There is a begin-procedure button.
 - -Phase 6: The user is shown the video. No on-screen menu, but they can open a pause menu to change settings, rewind, exit to menu, etc.
- -Phase 5: The user can select to replay, return to beginning of selection, or exit. Concept 3: 3-phase, condensed
 - -Phase 1: The user opens into a welcome screen with a distinct language selection, and below it, all options for the software, and a begin button.
 - -Phase 2: The user is shown the video. No on-screen menu, but they can open a pause menu to change settings, rewind, exit to menu, etc.
 - -Phase 3: The user can select to replay, return to menu, or exit.

Main Menu (Imaan):

 MENU FOR PATIENTS
(d)(d)
 Welcome to the Place select your
Radiation Therapy preferred language
 Simulation OErgitch o French
 a) Do you require d) Are you ready?
supplies?
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 O NO
e) Your video is f) you have now
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it where we are video's Good luck.
and set in the set victor Good luck,
 MENU FOR MEDICAL STAFF
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Concept 1:

The image above represents what the menu will be like for both, patients going through the experience as well as the medical staff controlling the experience, therefore it needs to be as straightforward and simple as possible to not stress out the patients nor confuse the medical staff. However, the menus are not absolutely the same for both of them because there are some aspects that only the medical staff can control before starting the video for the user. So, one controller will be given to the patient so that they may select their preferences and the other controller will be given to the medical staff so that they can enter the necessary elements of the treatment depending on the type of patient's age group (children or adult). Throughout the playing of the video, the option of rewinding, pausing/playing and fastforwarding will be available. **Concept 2:**

For the medical staff, there are a few things they can do that the user viewing the video cannot do. Only the medical staff is the one who chooses the age group which will change the way the video is presented. For example, if the age group "Children" is selected, the video will have animations. Nevertheless, there are a few selections both users and medical staff makes. Also, when the video is playing, the medical staff is the only one who is able to completely exit the video in case of any emergency or disturbances. They are also able to rewind, pause/play and fast forward the video when they see fit. At the end of the video, however, they can also rewind, replay or completely exit the video, controls which the user has absolutely no access to. **Concept 3:**

As aforementioned, the user does not have as much control as the medical staff but the user is required to make a few selections before the video begins. However, even though the patient makes these selections, the medical staff also has to make them to confirm that the selection made is accurate and correct (medical staff are the only ones who can modify the selection if required). At the end of the video, the patient sees a message that informs them that the video has been completed. Any further controls can only be controlled by the medical staff.

MATAN ZELILOVITZ OFor USer CONTROLS: () For medical slaft) O Easy, suple O start/Gut Ø Big Gold bont ophions combols, ersy to fewer, better Design Ø 2 Playbach Volume stort/ Control conhol Gru Control Medical shaft Controls: Start/End Simulation Proceedine Selection Language /Subhitles selection (Could also be for user Design - Demographic Selection 7 User Controls: - play back control (rewind, forward, play, play, stop Volume control Subhilles / Caryrage selection (throughout Silvalation +7 Medical shaff controls: - Procedure Selection Demographic Selahim (Adult/Youth -Start/End similation / Quit Design -3 User Controls Start/Quit schuldhim -Playback controls language / Subhiles selection the certain Notification / 201 - up distuctions

1.2 Subsystem: The Controls

Controls: Matan Zelikovitz

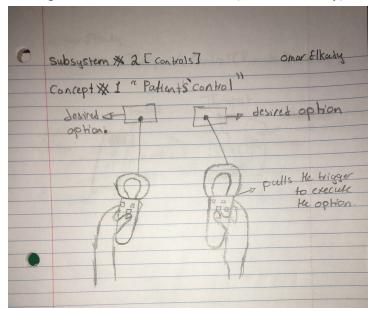
Design 1: Description: The medical staff will have overall control of the procedure and start/quit options. These control will be easy to navigate and visualize. Same for the Users' control, which will be easy to read and follow. They will have control over payback and quit options.

Design 2: Description: Here is a list of prioritized controls (minus the start/end control) which the medical staff will have control over; Procedure selection, language/subtitle selection, demographic selection, and Start/End(quit) selection. The User will have control of playback, volume as well as subtitles/language control. They may feel more in control if they have the power to turn on/off subtitles or switch languages which is comforting. This can be operated throughout the simulation.

Design 3: Similar to previous designs, I have included notification/alert options for the User. When an instruction appears, after an allowable amount of time to read the instruction has passed, the user will have the option to have it disappear once it is read and understood. This ensures the User has read/heard the instruction and acknowledged it.

Subsystem #2: (Omar El Kady)

Concept #1: " Patients' Control" (Omar El Kady)



Description:

This control option is based on the default program in the Oculus Quest. Assuming that we created a menu similar to the ones cited above, the patient will have full control over its functions and commands using the controllers. Simply pointing the controller on the desired option and pulling the trigger will execute it.

C	-Omar Elkady Concept * 2 "Therapist's (Control (Remo	te Desktop)"
	heudset	Througist	video simulations,

Concept #2: Therapist's Control (Remote Desktop)" (Omar El Kady) Description:

In this control option, the patient will be absolutely free handed. Moreover, the therapist will be the only one in control of the simulation options and functions. Using the Bigscreen's "Remote Desktop Feature" that will enable the therapist to stream his/her PC Desktop into the Patient's Oculus Quest. Meaning that the Therapist will be the one choosing the video and will be directed by the patient he/she desires to execute an option i.e. Play, Pause, Volume Percentage, etc. This Concept will help the patient focus more on the simulation without any distractions.

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Concept * 3. "Patient's Non-distacting Control"	
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Concept #3: "Patient's Undistracting Control" (Omar El Kady)

Description:

In this control option we will basically combine the first two concepts, whereas, the patient will have full control over the options both in the menu, and during simulation. One of the constraints is that during the real treatment, the patient should be perfectly still. Nevertheless, during simulation, the patient is actually encouraged to look around. During simulation, however, it is beneficial for the patient to stay as still as possible not to find difficulty in staying still during the real treatment. Moreover, we can both minimize the patient's movement and give him/ her full control by setting default control pad. The patient will need to be fully familiar with the positions of options on that control pad.

In this control option the patient will be laying down with a control pad underneath his/her fingers. In addition, for the patient to execute a command i.e. pause, play, etc., the patient will be able to execute these basic commands by only pressing buttons with his/her finger. Without requiring the patient to neither point the controller, nor ask the therapist to execute a command for him/her. The patient will, subsequently, be more relaxed and less distracted.

Controls (Dhara)

Design 1:

The controls will be easy to navigate and understand. All selections will be controlled by the medical personnel. Some options will be controlled by the users. The option to pause/play and subtitles or audio is essential for users to control in order to feel stress-free. If they are overwhelmed by the experience, they can at least pause. They will also be able to control the volume of the audio. They will also be able to control how long the instructions or audio prompts last during the simulation. For instance, the user can cancel a particular set of instructions once he/she has read it and followed through. They cannot control the playback speed however to make sure that they really understand the real experience, which is quite lengthy. The user can choose to rewind if needed.

Design 2:

The medical personnel will be able to control all the selections. However, even fewer options will be controlled by the users. The basic options of pause/play, subtitles, age, language, volume will be controlled by the user. However, they cannot control the instructions pop-ups or audio prompts that come up during the simulation. Unlike concept 1, they cannot cancel an instruction showing up on the screen. The instruction will stay on for a reasonable amount of time (longer for youth version), and they will have to wait till instructions pass away to show the next step. There will be an option to go back and look at the instruction if needed once the time is over. The user will also be able to rewind the video if needed. Other than that, the rest of the controls will be the same as concept 1 and will be controlled by the medical personnel.

Design 3:

The controls are shared by both the user and the medical personnel. This means that the medical personnel can choose what controls they want to set and what can be controlled by the user. The medical personnel can control the system using a computer screen. Using this concept, the medical personnel can help the users having difficulty navigating through the system or prefers to have someone else to do it for them. In this case though certain options will still only be controlled by the medical personnel such as which treatment/therapy simulation and forward option. For all the other controls, as long as the medic okal personnel does not select a course of action, the user can control the simulation of information pop-ups blocking or rewinding, and pausing/playing.

Controls (Sean):

Concept 1: Maximally realistic

-The user selects options by putting their hand on/into them.

-The pause menu is a separate scene like the menu, not an overlay.

Concept 2: Minimally taxing

-The user shuffles through options with a button on one hand (like a Tab key),

toggles/clicks items with a button in the other hand.

-The pause menu is an overlay which is static relative to the 3D world.

Concept 3: Pointers

-The user selects options with a cursor controlled like a laser pointer in their hand. Clicking is done with a button on that same hand.

(Option included to choose dominant hand.)

-The pause menu is an overlay which is static relative to the 3D world.

Controls (Imaan):

Concept 1:

All the controls, whether for the user or the medical staff will be extremely straightforward. Most selections will only have two options from which the user or the staff can choose from. Most of the selections will be similar for both sides however, they will be equally simple to navigate.

Concept 2:

The user will control what they see and hear, so they will be able to choose the language in which the video will play as well as whether subtitles will be displayed or not. They will also be able to rewind, pause/play and fast forward throughout the playing of the video.

Concept 3:

Even though the user chooses what they will see and hear, it is in fact the staff who makes the more refined selections. They are the ones who choose officially the language in which the video will play as well as the language of the subtitles, if any. They also have the same controls as the

patient when the video is playing but they can only exit the video completely at any time if needed, in case of any emergency or incompatible. In addition, it is the medical staff who controls the prompts or who can modify any of the selections if required. They can also insert important information into the video if or when they see fit.

1.3 Subsystem: The Audio/Visual Instructions

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(,)	- Visual instruction (selections)	1 - Visual instructions to include :
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		-look cround
		- Remilders
	Medical shaft	User
Design	- Send to test	- sound from video provided
20)	Volume level	- Visual / oudio instructions to include.
	- Nisual distructions	- Select volume control
	- Their menus	- Reminders of movement
		- Visual/audio notifications suchas:
		- Welcome Screen
		- Vescribed auditor/sublitles
		of procedure
		- Gnd of simulation
	USER	
	- Sound From video	arovided - reminder of volume control (Blink)
Design		at he here will be
Design	- Movement, notifying	user it is OK to look around drink
	Simulation but	user it is OK to look around drining
	(depending on proc	edsee)
	- Visual /andio notification	
	- Wolcome Sciela	
	- Procedure name / de	scription / facts
	- Instructions	on playback ophions / healter removal

Audio/Visual Instructions: Matan Zelikovitz

Description of all designs from Basic (1) to Detailed (3):

Each design in this section increases in complexity. The medical staff will have no problem seeing instructions, though Users may have a harder time. The medical staff will see procedure selection, demographic selection and start/end simulation control selection. The Users' audio/visual instructions however, will be more detailed. The User will receive reminders of volume and playback control, which may blink to indicate position. Video and audio instructions may include; movement (looking around), though notifying the User they can move during this simulation, but not during the actual procedure. Notifications including a welcome screen with procedure name and description will ease the patient as they learn about what they are about to go through. An end of simulation notification will notify the User the simulation has completed, but reminders that they are still to obey instructions from medical staff.

	Omar Elkady
0	Subsystem * 3: audio / visual instructions
	Concept * I "Audio script and subtitles"
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	scenario # 2: Modified autio script
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Subsystem #3: (Omar El Kady)

Concept #1: "Audio Script & Subtitles" (Omar El Kady)

Description:

The Oculus Quest Headset has an AUX Plug in it, which means that audio files can be played easily on the headset even from a cell phone. This Concept will include both Audio instructions and written subtitles for these audio instructions. The simulation will include a default audio instruction and subtitles file to be played for the patient. However, if desired, the instructions script can be read by a patient's relative or loved one and uploaded as the simulation's audio file. Since the person reading will be reading the script given to him/her, the subtitle file will not have to be changed or altered.

omarElkaby 0 concept * 2: " Therapist's Instructions" simulation ver ber a intruc

Concept #2: "Therapist's Instructions" (Omar El Kady)

Description:

This concept relies mostly on the therapist; the therapist will see the simulation from the patient's perspective, however, from his/her Computer. As the simulation proceeds, whenever the patient needs to do something or change a position, instead of an audio file, the therapist will verbally instruct the patient. This Concept's method is useful in case the patient has difficulties hearing instructions, and reading subtitles. Basically, if the patient doesn't hear an instruction from the therapist, the therapist can easily repeat it or physically help the patient get in position.

0	Omer Elkudy Concept # 3' Animated Instructions"
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autio Instruction or please situp))
	please sit up ?
, ,	

Concept #3: "Animated Instructions" (Omar El Kady)

Description:

This Concept combines Audio Instructions, Visual Subtitles, & Animated Instructions. The idea of this concept is to add an animated character to the video, this animated figure is taking the shape of a human and is simulating the instructions.

For instance, if there are no new instructions, the animated figure will just be taking the position of the patient i.e. laying down, sitting up, etc. Moreover, once an instruction is given, this figure will demonstrate what needs to be done by adjusting its position accordingly. So in this concept, the patient will be able to hear instructions, see subtitles, and see an animated demonstration of the instructions.

Audio/Visual Instructions (Dhara)

Design 1:

There will be a file uploaded with instructions that will show up as pop-ups written on a sticky note, which will be accompanied by audio instruction prompts. There will be instructions for the

user's orientation such as sitting, standing or lying down during the simulation. These instructions will be seen on the screen by the medical personnel on the computer screen which displays the same thing shown on the VR headset, but in 2D. The instructions will pop-up accordingly when the video plays and last for a while.

Design 2:

There will be a character that pop-ups with a sound effect every time there are new instructions during the simulation. This character could be a cartoon character for younger version and a human being dressed as a doctor, which comes on the screen while the video pauses. The instructions will be given and the user will have to read the instructions and follow through. Once they do what is instructed, they must click on the 'understood' option at the end of the instructions, which will cause the instructions to disappear from the screen and the audio instructions to stop. The user can then press 'play' and the video will resume. The medical personnel will be monitoring the display on the computer screen as well similar to design 1.

Design 3:

The written instruction pop-ups will be the same as concept 2. The audio of the instructions can be uploaded manually every time by the medical personnel before running the simulation. Using this concept, we can have the instructions recorded by a family member or friend before the simulation, which can then be uploaded to the video file. This concept enables the user to be relieved by hearing the voice of a loved one during the simulation. The audio instructions will be the same except the voice will be different. The medical personnel will also follow the VR screen throughout simulation to help or provide assistance during the simulation if needed. They can decide if they want to upload a different audio or not depending on the situation.

Audio/Visual Instructions (Sean):

Concept 1: Minimalistic

-Optional audio can be chosen to replace or be played alongside the video.

-The videos are then shown as recorded.

-Videos can be paused and rewound in the pause menu.

Concept 2: Textual descriptions, custom audio, and prompts

-Optional audio can be chosen to replace or be played alongside the video.

-There are occasional prompts where a description of the current stage of the process is shown on the screen and the video is paused.. It may be required to lie down/stand back up to continue, or just to hit "proceed".

-These may be in speech bubbles from a cartoon character, in a different font, and with more playful language/similes, etc., in kid mode.

Concept 3: Audio-only descriptions, custom audio, and prompts.

-Optional audio can be chosen to replace or be played alongside the video.
-Audio descriptions are given without pausing the video. (They are reflected by the captions if captions are enabled.)
-Prompts to change position occur, also as audio.

Directives (Imaan):

Concept 1:

As the video goes along, there will be a few pop-up messages in the video to keep the user informed on what is happening at a certain part in the video. For example, when the process of radiation officially begins, the patient will see a message which says "The radiation will now begin". There will also be instructions on what the user should do at such moments like whether they should lay up or down and when they are required to stay absolutely still.

Concept 2:

The user has absolutely no control over the directives given. They can only choose to add additional subtitles which includes what the medical staff in the video is saying. They also have the choice of selection of the language in which these instructions will be given before the video even begins. If something is not completely understood by the user, they are capable or rewinding it to watch it again or pause the video to ask the medical staff present with them during the experience.

Concept 3:

Since the medical staff has primary and dominant control over this simulation, they are the ones who control what exactly is shown on screen. They are also able to insert any comments they see fit at any given moment to enhance the patients comprehension through this experience. The medical staff are also the ones who control what language the subtitles and the directives will be shown in. This person will be following what the patient sees on their VR screen through the screen available to them. They can also modify or completely change the video and subtitles depending on situations or type of treatment.

Global Concepts

1: Sean's Concept:

Menu - Sean, Design #1:

Concise, and welcome screen ensures no language trouble while providing an introduction as well.

Controls - Sean, Design #3:

Faster, satisfying, fun than others. Very low physical exertion needed.

Audio/Video Instructions - Sean, Design #3:

Very immersive, while still providing all pertinent information, guiding patient along without being excessive.

2: Matan's Concept:

Menu - Matan, Design #2 and #3:

This mix of designs allows the medical staff to control what the User will be seeing in the simulation, depending on their procedure. Following this selection, they will determine youth/adult options depending on the age of the patient. This will allow for easy operation from the User. The User will determine whether or not they want to have subtitles, as well as choose which language they want. More immersive than design #1

Controls - Matan, Design #3: This design allows the User to control language and subtitles, making this design more immersive than designs 1 and 2. The medical staff will only be able to select the procedure and menu type (adult/youth). The User will have playback, volume and start/end control.

Audio/Video Instructions - Matan, Design #3: Blinking volume control at the beginning of the video shows the User where the volume level is. Pop-up notifications such as "Please feel free to move around and have a look, but remember to stay very still during the procedure". These will be accompanied by audio forms of what the notification is saying. This allows for a fun and immersive setting. Welcome and goodbye screens will notify the User the simulation has begun or is ending.

3: Dhara's Concept:

- Menu Dhara, Design #1 and #2: The mix of the two designs will allow for the medical personnel to choose the treatment beforehand, the user can choose the age and language. The home button option allows for a better overall use and the brief information given about the treatment before the simulation helps the users to prepare for the treatment.
- **Controls- Dhara, Design #2**: This design will allow both the medical personnel and the user to be in charge of the controls. The basic things will be controlled by the user, they will be able to rewind and pause when needed.

This design will make sure that the user understands the instructions before proceeding, while also giving them an opportunity to review the instructions if needed. The youth version will have the instructions last longer than the adult version to allow more time for kids to understand.

Audio/Visual Instructions - Design #2: The character that pops up with sound effects every time there are new instructions is the best way to capture the attention of the user. Also, the different characters such as a human being or cartoon for the youth version makes the VR simulation much more relaxing. When the user presses 'understood', it makes sure that they have actually taken the time to read the instructions. At the same time, the medical personnel can see that the user has clicked 'understood' and check that the user has followed the instructions, such as lying down or staying still.

4: Omar's Concept:

- Menu-Omar, Design #1 and #2: With the first design as the start menu, and the second design as the tools menu during the simulation; this combined concept will give the patient an easy control over the video selection, along with some basic options as play/pause, fast forward, rewind, etc.
- **Controls-Omar, Design #3:** This concept is ideal because it grants the patient control over various options during simulation that will help him be more comfortable. Furthermore, this concept does not require the patient to move or point in order to select an option. Instead, with the click of a finger, the patient will have the ability to freely control the volume percentage, pause/play, etc. with a press of a finger.
- Audio/Visual Instructions-Omar, Design #3: This concept combines the 2 features of previous concepts including: Audio Instructions, Subtitles, and adding to them the Animated Demonstration feature. In this concept, the patient will be able to hear, and see instructions as well as monitoring them demonstrated in front of him/her by the animated figure.

5: Imaan's concept:

- Main menu: The menu gives overall simple navigation to the user and the medical staff
- **Controls:** The primary controls are given to the medical staff as they are the ones who mainly control what exactly can be seen or heard during the video but the user is the one who has basic control such as the selections before the video.

		Rating: $\frac{1}{2}$ = poor, $\frac{2}{2}$ = moderate, $\frac{3}{2}$ = good				
Criterion	Importance	Concept 1	Concept 2	Concept 3	Concept 4	Concept 5
Diversity (ages)	5	2	3	2	3	2
Cost	5	<mark>3</mark>	<mark>3</mark>	<mark>3</mark>	<mark>3</mark>	<mark>3</mark>
Movement	5	1	<mark>3</mark>	2	2	<mark>3</mark>
Playback	4	3	3	3	2	3
Controls	5	2	3	3	3	3
Aesthetics	5	3	2	2	1	1
Total score: sum of (importance*value)		67	82	77	68	72

Directives: The user can only see the directives but the medical staff is the one who can modify this part of the video.

Conclusion:

In conclusion, based on the highest score, the team has decided that the best concept to be used is Concept 2 as it best meets the clients needs and design criteria. The reason for this conclusion is that the chosen concept design relates to the problem statement defined in deliverable B: "Therapists at the Ottawa hospital need their patients to stay as calm and still as possible during therapies by giving them a pre-therapy simulation in a virtual environment through a VR headset that is low in cost, high-resolution, bilingual, and includes subtitles." The concept chosen meets the design criteria described in previous deliverables. For all these reasons, the team has ultimately determined that Concept 2 is the best choice to allow us to create a product that will greatly help reduce the patients' stress and allow them to stay calm and still.