SEMESTER 2
DM7910 . SAMUEL BARKER

AR/VR INTERACTION PROPOSAL
by Tina Scahill
12TH FEBRUARY 2021

Contents

"there should be no end to experimentation"

- Zaha Hadid

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Aims of this proposal:

Throughout this report I will call my interactive design idea an app.

Anxiety is defined as: a feeling of unease, such as worry or fear, that can be mild or severe. Some people find it hard to control their worries. Their feelings of anxiety are more constant and can often affect their daily lives.

Mental health issues have many different categories, I have chosen anxiety as my focus. The current situation in the UK due to the Coronavirus pandemic (2021) society has collective feelings of alienation, loneliness and have become more anxious.

Anxiety is the main symptom of several conditions, including: panic disorder, phobias, such as agoraphobia or claustrophobia, post-traumatic stress disorder (PTSD), social anxiety disorder (social phobia). **Anxiety Symptoms include:** feeling restless or worried | having trouble concentrating or sleeping | dizziness or heart palpitations.

(https://www.nhs.uk/conditions/generalised-anxiety-disorder/)

The module is concerned with AR and VR technology – my question is to think about the best delivery for the anxiety application. I aim to consider how and when an app could be used, and who would be motivated to engage with it.

Fig. 1 : Headset sales shipments 2020 to 2025 by Statista

With these figures in mind I appraised the two routes I could choose for this module,

Augmented Reality AR or **Virtual Reality** VR:

AR ROUTE:	VR ROUTE:
• Design an app that can be used when going about everyday tasks, walking or sitting.	• Total immersive.
• The landscape can have elemental enhancements to it, virtual flowers birds trees.	• A built environment where the imagined landscape is provided for you and you make choices of the paths to move down. Involves a physical experience, not in the real space.
• Image targets to interact within the app, along with feelings assistance for happiness, sadness, fear and anger.	• Image targets within the app, all other functionality will be the same as the AR.

Through my research I found articles where AR or VR assisted in 'Emersion therapy' (Wolters, M, 2014) The VR would need to be carefully manipulated to the individual. A bespoke VR scenario could be created, a safe surrounding would need to reflect in almost a dreamlike way a safe reality that the patient would know. In order to do this I would need to work with psychologists and mental health professionals.

When considering the pathway the scale used by Patrick Reipschlager (2018) gave me a sense of how deep the environment would be in VR and AR for the submersion of an anxious persons mind.
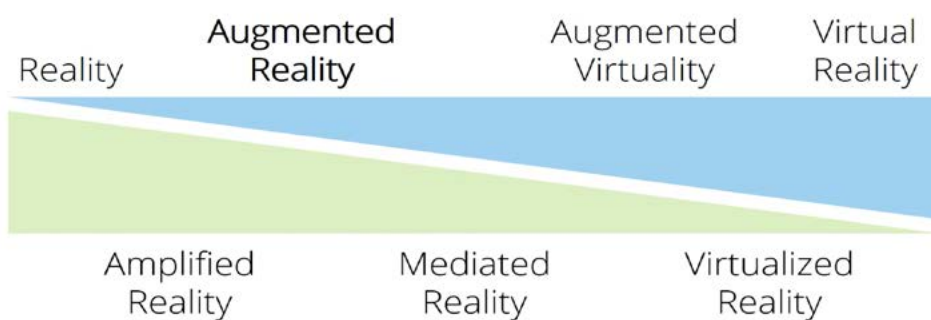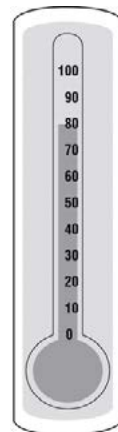

Fig. 2 : Reipschlager scale

In order to understand the levels of distress that anxiety can bring, I referred to psychology literature and the SUDS scale (The Subjective Units of Distress Scale) as cited by Sudie E. et al, 2015.

I think my app would be aimed at the 0-50 percentile subjects, those who could function, but required a method for reducing their anxiety.

100 – Highest anxiety/distress that you have ever felt

90 – Extremely anxious/distressed

80 – Very anxious/distressed; can't concentrate. Physiological signs present.

70 – Quite anxious/distressed; interfering with functioning. Physiological signs may be present.

60 – Moderate-to-strong anxiety or distress

50 – Moderate anxiety/distress; uncomfortable, but can continue to function

40 – Mild-to-moderate anxiety or distress

30 – Mild anxiety/distress; no interference with functioning

20 – Minimal anxiety/distress

10 – Alert and awake; concentrating well

0 – No distress; totally relaxed

<u>Note:</u> "SUDS" stands for **"Subjective Units of Distress Scale."** Physiological signs may include, for example, sweating, shaking, increased heart rate or respiration, gastrointestinal distress.

Fig. 3 : SUDS scale

There have been tests conducted on how VR/AR exposure based therapy can help PTSD. Dr Kaplan, gives scientific evidence that psychological stress can be helped by the use of VR (Kaplan, J,S, 2011).
Dr Kaplan states that *"In clinical practice… these treatments are underutilised, which highlights the need for additional dissemination and training."* (Journal Psychiatric Times, 2011) there is a gap in this market to assist clinicians with new virtual tools, so my app could be of assistance.

The needs within the virtual world can be shown with Abraham Maslow's pyramid The Hierachy of needs, an example of the hierachy theory is used to look at VR, Appendix 1. Utlising the Maslow model Martin Seligman has created a theory of PERMA : Positive emotions, Engagement, Positive relationships, Meaning and Accomplishment.

The aim of games and gamification carries many of these elements, so when thinking of developing a well-being app the theory of PERMA is a requirement.
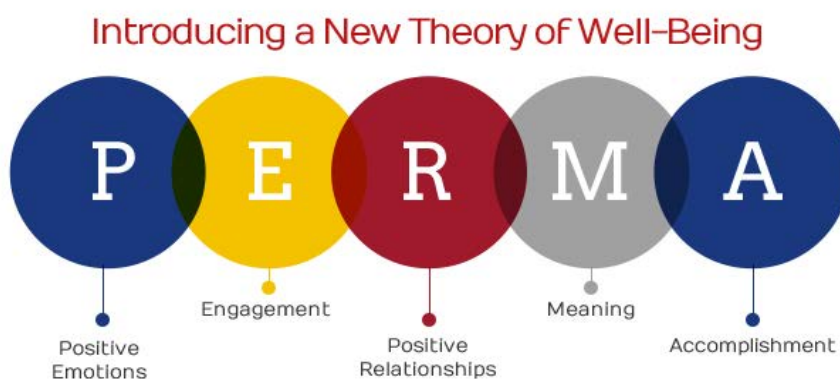

Fig. 4

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Critical evaluation of the techniques and equipment:

The look and feel of the reality will be important to assist in helping those with anxiety. Colour theory plays a huge part in a person psyche.

Aristotle developed the first known theory of colour believing it was sent by God from heaven through celestial rays of light. And Sir Isaac Newton worked on the theory of Optic's, a treatise of the reflections, refractions, inflections and colours of light... published in 1704 (library.ci.edu).

Newtons theory was challenged by Johann Wolfgang von Goethe, Theory of Colours in 1810. Goethe observed that colour arises at the edges, and the spectrum occurs where these coloured edges

overlap, he annotated his work with notions of emotional connections to colours. Light within a spectral world, and an imagined space for the eyes receptors can induce feelings of calm, ease anxiety, and can promote happiness.
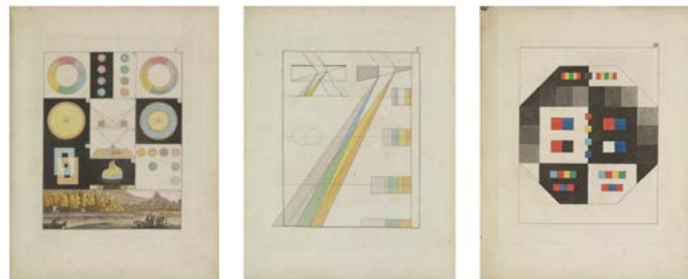
Johann Wolfgang von Goethe
Zur Farbenlehre [Theory of Colors]
Tübingen: J.G. Cotta'schen Buchhandlung, 1810

Fig. 5

My initial ideas were for a VR game, so the title Walk with You was used. I decided to test out my phrase with 8 people and see what they felt about the name, I only told them it was for an Anxiety app. I used an alternative too, Walk for You.

I had some interesting feedback, see Appendix 2, Walk with You was favourite, I also got some alternative suggestions of: Walk away Worry, Walk your Way, Journey with You.

This mini branding exercise made me analyse what the app was about, the tone and voice of the app, and how I think it will come across to the end user. The focus of an app like this has to be on the subject themselves, as it is personal and trying to provide emotional assistance.

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The way that the app will interact with an augmented world view, a concept of a *"receptive field"* by Lawrence Shapiro *"is central to understanding what makes such perceptual feats possible. The mechanoreceptors in the somatosensory system and the photoreceptors in the visual system each attend to a particular region on a sensory surface. So, for instance, although our skin appears homogeneous on its surface, this homogeneity disguises a patchwork of overlapping receptive fields."* (The mind Incarnate 2004, Pg112-113). Our Sensory system and its perception requires, *'reception, transduction and processing'* (Pg115) and this processing of VR occurs within our brain and the computer generating the VR.
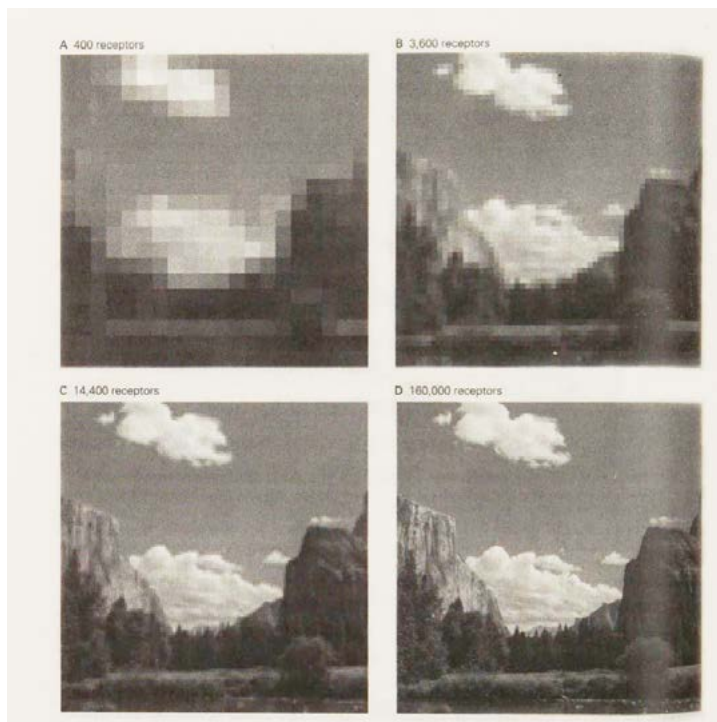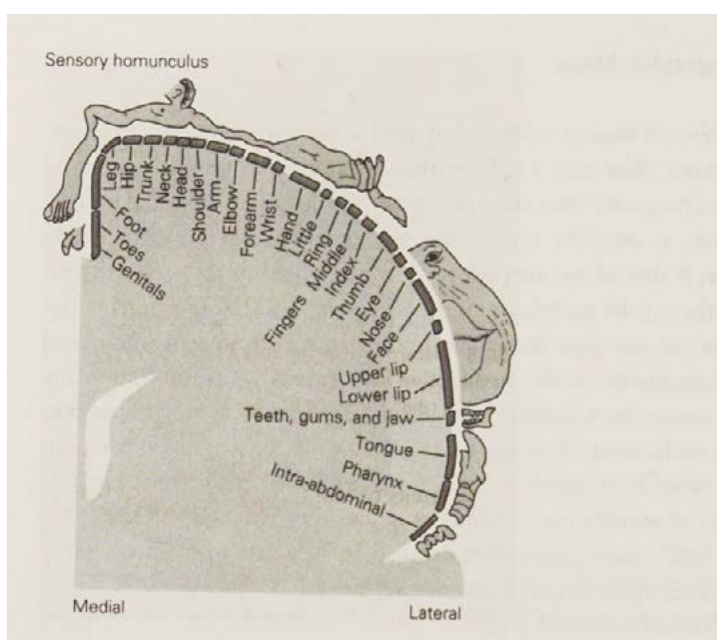

Fig. 6 : Pg114 image of the receptors of vision

Fig. 7 : Pg122 the image of the homunculus

The demonstration of the HoloLense headset, gave a sense of how I would expect people to interact with the technology. The app uses a mobile phone to access the AR environment, the virtual headset gives an insight into the physicality of a virtual space. To watch movie of the VR world for example The Matrix by Warner Bros. (1999) does not really give you a sense of the immersive experience a head set can offer.

In a gaming environment B. Shneiderman in *Designing the user interface* (2017) says *"In conducting research into player performance experience, the games with multiple players seem to hold more interest in the social connection with others, teamwork, and collaboration. The single-player games seem to focus more on the game narrative and the characters, and players show more interest in the degree of immersion."* (Johnson et al., 2015)

The interaction between people inside a virtual environment is a key concept to apply to any therapy in the AR/VR world. I notice that Shneiderman advocates that the single player mode allows for deeper game play, and perhaps this would uphold any ideas that an app would be beneficial, control of only yourself within the space and not sharing the experience with anyone else.

Processes in the use of AR or VR applications in the commercial / heritage or educational sector:

Mobile phones are such an integral part of our lives that they feel like an extension of our body; technology can be integrated into our lives via our new natural phone habits.
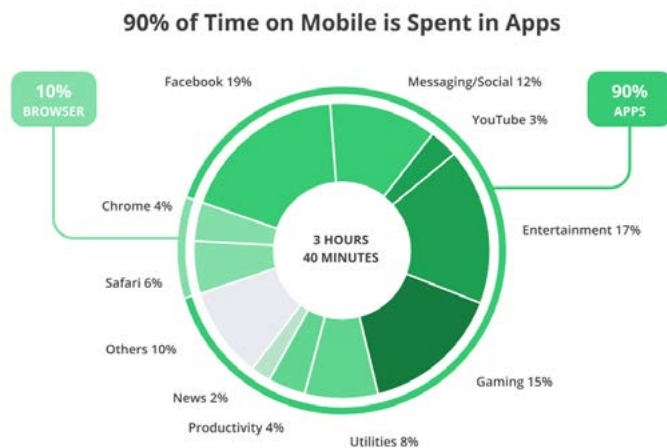

Fig. 7 : https://www.edvicehub.com/how-to-start-app-development/

Don Norman invented the term *'User experience'* (1993) (Nelson Norman Group) this is at the front of how I approach the app development, by focussing on user experience its production should not over complicate the aim of the app — to reduce anxiety.

Shneiderman in *Designing the user interface* says that a good interface design needs **Eight Golden Rules** of design interface: consistency, universal usability, offer feedback, design dialogs to yield closure, prevent errors, easy reversal of actions, keep users in control, reduce short-term memory load (2017, pg93).

This led me to investigate how a computer can assimilate our world. Alan Turing's test for computer intelligence called the Imitation Game provided some insight.

Alan Turing developed a test to decide whether a computer was intelligent (1950). — an interrogator asks a question via teletype, to a person and a computer, after several minutes the interrogator must guess which of the two conversations he had were with a computer or a human. Turing said that if the interrogator could not tell which was which the computer had intelligence. Intelligence is defined by Turing as operational, the test was argued to be less of a point that computers had intelligence but more about *'culturally - orientated human intelligence'* (Gere, C 2009)

The 'receptive fields' that Shapiro talked of need to match the expectations of the person engaging with VR, match their belief system, their culture and their known world. With this is in mind can VR really help anxiety in a virtual way? Computers can trick a user into thinking they have intelligence (Turing test) but they have to be programmed from the experiences and perspective of the intended end user.

Education is a rich area of opportunity to explore these programs – an article by Xiaodong Wei, (et al. 2015) discuss how in China they are trying to counteract the issues of teacher knowledge holding back a students future knowledge. How the use of 'AR creative classroom' and 'AR creative builder', can help to further students and teachers skills and enrich the education. See appendix 3.

Burberry featured in Vogue Business news July 2020, they became the first to create a social retail experience. The Chinese store utilised WeChat (mini program) to engage shoppers, they had researched that 80% of their customers has used a digital touch-point before they purchased. Burberry placed QR codes on items so the customer could view additional content, before purchase.

Fig. 8 : Burberry tests "social retail"

In early virtual artwork by Brenda Laurel and Rachel Strickland called *Placeholder* (1993) they designed a scene where it encouraged interaction with the environment (a landscape) and participation between others in the scene, it took 11 computers to run the programme! VR headsets were attached by cables so had limitations of the technology of the time. (Moser, M et al. 1996)
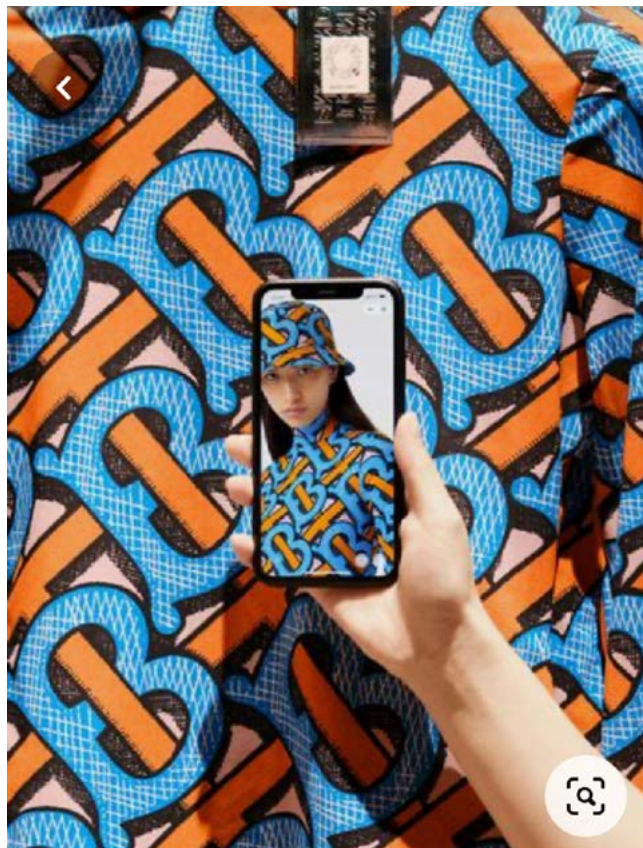
The links between artistic work and the development of AR as a concept can be seen with the artist Yayoi Kusama and the Infinity Mirror Room.

The immersive Infinity Mirror Room, allows the viewer to into the art, and the artists world.
A world of infinite possibilities... repetition is a defining part of her practice, and the motifs Kusama uses are a central point to her narrative, a virtual world - a world where you are reflected back from another dimension.

Fig. 9 : Infinity Mirror Room − Phalli's Field, 1965 installation. Ota fine arts, Victoria Miro & David Zwirner.

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Applied a critical understanding AR applications and/or VR environments using appropriate hardware and software tools:

I anticipate working in Unity to build the AR target features for my App as it has an end to end solution. This will take advantage of the Augmented Reality Markup Language (ARML) which is being used to standardize XML grammar for virtual reality. There are several software development kits (SDK) which also offer simple environments for AR development. I will utlise these plug-ins of object tracking to plane detection.

The monobehaviours of the Application Programming Interface (API) as described by the Unity AR foundation, can allow for a variety of different platforms (Apple IOS, Google Android or Microsoft Windows) to access the features of the AR foundation. Within Unity the subsystems I will access to add to my build as necessary. As I am a Apple mac user so will ensure that I use ARKit XR Plugin as my preferred foundation.

Integrating the AR into the real world I will look into Unity Mars as the WYSIWYG authoring will allow me to create what I need visually without the need to heavy code the program, a benefit to me as I am starting my AR knowledge.

I will also need to create items that have movement and a reality about them, for instance my graphic the 'Fountain of Knowledge' see appendix 5, would benefit from water shaders using the master stack feature. I will be required to learn all these new programms and will research how to implement them into the work.

The Healium VR Application for an Oculus headset supports my initial ideas that therapy apps can help anxiety. StoryUp Inc. - makers of the Healium platform (https://www.tryhealium.com/#stories) commissioned a report that illustrated the brain function before and after using a virtual world, the mind seemed calmer in the images *"Our results support the notion that intentionally crafted VR experiences can be therapeutically effective, and may result in immediate, adaptive psychophysiological outcomes."* (Tarrant Jeff, et Al. 2018)

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Healium has also expanded to an AR application too, it can link with an Apple watch or a brain link headband to monitor heart rate. *"It's a self-awareness tool that allows you to discover your ability to control your brain patterns and heart rate during guided meditations"* (https://www.tryhealium.com/faq/)
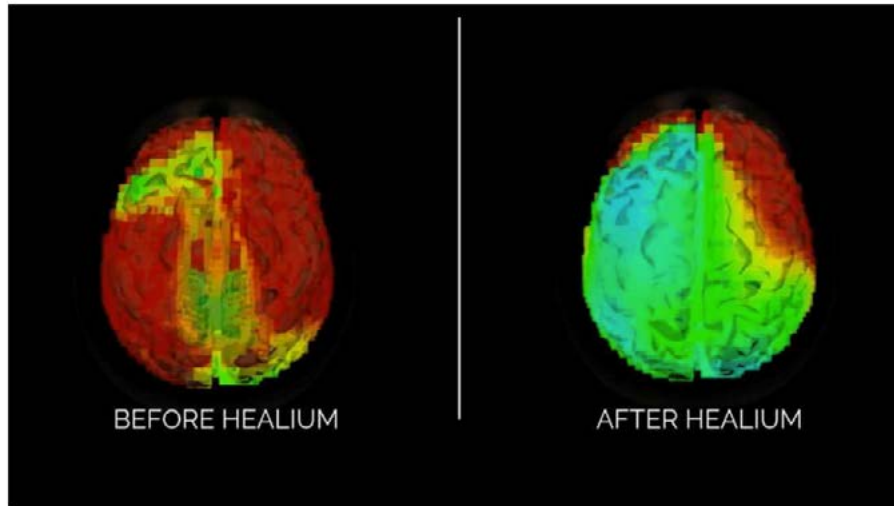
Fig. 10 : Brain scan from research by Healium.com

Reviewing the brain images by Healium through my research I discovered an photographer Roselena Ramsitella, who was looking at emotions and refugees through a thermal imaging camera. Her photographs show that their heat signatures 'tell' us what they are truly feeling. Her images made me think about the use of my app in a medical sense, in the future could the phone app scan you and assess how you are feeling... could it diagnose the emotion and help you over come.

Fig. 11 : Photographer Roselena Ramsitella project "Warmth"

Review detailing the time line/workload :

- I aim to develop the elements for the AR in Illustrator, I might quickly try out the items in Adobe Aero to see how they look/will work.

- I shall develop the branding further – after reviewing the logo feedback, this will assist in the direction for the development of the assets. The look and feel of the app will be styled out of a branding exercise, I cannot see the final app in my mind without the essential elements being organised.

- I will also get a collection of images that can express the tone I would like the app to aspire to.

- I need to quickly develop the skills required to use Unity and place items into an Augmented Reality framework.

- I aim to keep the interaction simple and easy to use on a mobile phone, image targets and links via AR buttons within the app should make it easy for the end user.

- Choice is a difficult task when you have anxiety, a loss of control. Enabling a choice at the outset I think will start the process within the app well.

- I will be meeting with my tutor each week, to keep the accountability to the progress open. I have also pinpointed several danger points in the Gantt chart when the majority of the AR needs to be in place. (Gantt chart - with threats see appendix 4)

- I aim to have set up one scene, as per the story board: appendix 5

- Create an image target 'Fountain of Knowledge' for the program, with interactive buttons. The design of the 'Fountain of Knowledge' is key to the interactivity, it defines the route the person will take in the app, based on how they feel, the user is to be in control.

- Design of all the other elements for the AR landscape, trees flowers, birds etc. Also perhaps sourcing other interactive forms: movie clips, songs, images.

- In my investigation I have found it useful to create a marketing plan. This has helped me to define the target market and estimate costs, also to understand where the app would be best place within the market. (Marketing plan: appendix 6)

- After my research of the benefits for AR/VR in helping anxiety, the aim of the app design is validated. Finding a competitor product called Healium AR, has also proven the app's worth within the well-being game field.

- These items will probably take me all of my 12 weeks project time, but will be able to fully extend the project if I am able to.

- Future requirements would be database development. The main driver of the application a Structured Query Language (SQL) system to offer chat bot assistance, offering choices for the person. The need for computer intelligence… or an imitation game (Turing 1950).
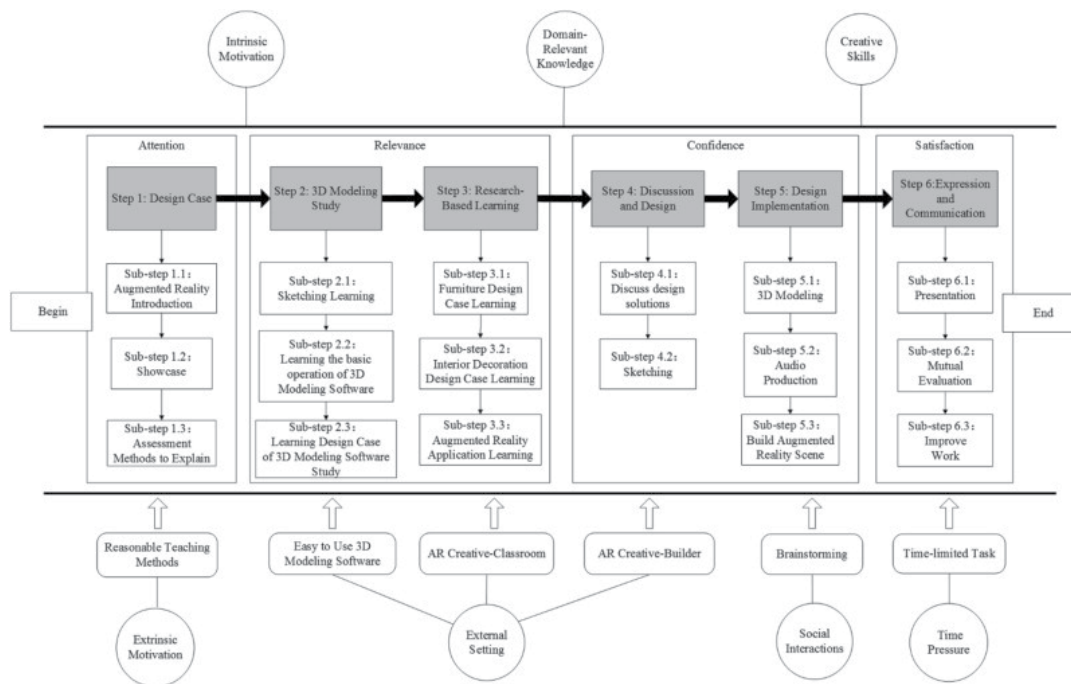
Appendices

Appendix 1 - Maslow Hierarchy Theory of VR

Appendix 2 - Survey monkey feedback screens
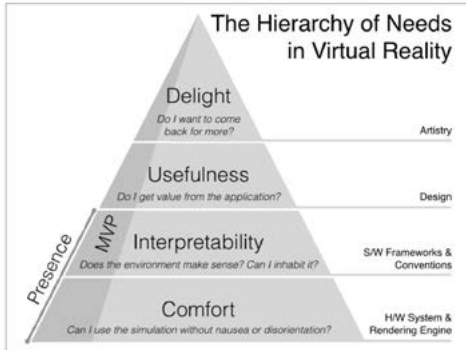
Appendix 3 - Chinese classroom chart on use of AR and VR

Appendices

Appendix 4 - Gant chart 10.02.21

Month: February — Week:

Tasks: Date:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
formative oral presentaton																															
AR/VR proposal essay																															
core reading																															
Storyboard the workings of the App																															
project development: research																															
Develop colateral ideas in Illustrator																															
Upload ideas into Adobe Aero for look and feel																															
weekly tutorials																															
Explore Unity for image target creation																															
Design a brand for the app																															
Design a project target																															
Creation of APP/world																															
BLOG																															

Month: march — Week:

Tasks: Date:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
weekly tutorials																															
Unity for app creation																															
Develop colateral in Illustrator																															
read and teach myself the program language																															
Creation of APP/world																															
BLOG																															

Month: April — Week:

Tasks: Date:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
weekly tutorials																															
Unity - ensure app is working																															
refining of APP/world																															
BLOG																															

Month: May — Week:

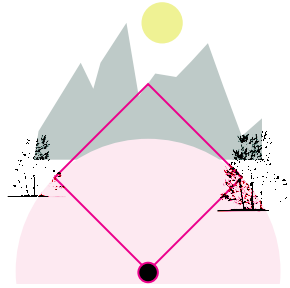	Tasks: Date:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
project portfolio outcome paper																															
reflective report paper																															
Refining design																															
BLOG																															

= danger points

Appendices

Appendix 5 - Story Board

Storyboard ideas

Natural landscape with a path that leads you forward

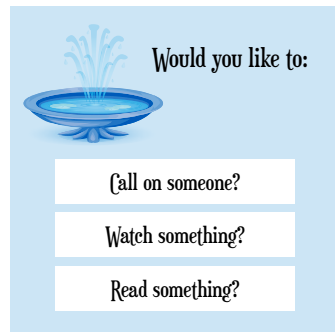30-45 degrees of perception in a VR environment. First person perspective.

Fountain of Knowledge. AR fountain with buttons for interaction and assistance.

You selected Sad

How can I help you with these feelings?

A new state of the fountain occurs, and new directions for you to engage with.

Would you like to:

Call on someone?

Watch something?

Read something?

The importance of the app is to allow for control, what would the person like to do in that moment. we can anticipate this and field several responses.

Watch the duck and listen...

Clicked on watch - cute duck video, metaphor for keep swimming and that your journey is begining - etc...

How do you feel now?

Happier

Calmer

Something else...

leave the app, or choose another additional method of calming - specifically for the emotional state you feel.

Appendix 6 - Marketing Plan: on the following pages

8 page document on the following inserted pages:

Scahill Design

Marketing Plan for AR /VR game

Our Objective
Overall strategy outlined in the pages that follow, I aim to develop an interactive experience for the use of people with Anxiety.

Tina Scahill
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Table of Contents

Business Summary

Our Company

Scahill Design is a company headquartered in North Hampshire. The company's mission is to involve themselves in

Our Marketing Leaders

Tina Scahill is the business owner and marketing collaborator.

SWOT Analysis

As Scahill Design's marketing team, we want to help the brand lean into what it does well, improve what it doesn't, capitalize on what it can do, and defend against what could challenge it. With that in mind, here is our SWOT analysis for 2021

Strengths	Weaknesses	Opportunities	Threats
What we're good at. What's working. What our customers like about us.	What we want to fix. What we want to strengthen. What we want to become more efficient at.	What the industry might soon want. What we think we'll be good at. What will be our difference-maker.	What we think could hinder our growth. What/who we think could take our customers.
Honesty Creative Planning Ideas Value for money	Develop into new creative areas New business goals New skills	Virtual reality Augmented reality 3D walk through	Time Lack of money Agency offering Too big a project

Business Initiatives

Scahill Design has the ambitious goal of future proofing the business and its skills. To help the business do that, our marketing team will pursue the following initiatives in 2021:

Initiative 1

Description: development of an App/game in AR or VR space

Goal of initiative: to make a useable app that can help people with Anxiety, not simply a breathing app but one where you can connect yourself out to others, and saty within the space. A safe place to escape.

Metrics to measure success: Creation within Vuefora and Unity of a playable design which looks and feels interactive to a *play using their mobile phone or ipad.*

Initiative 2

Description: To become Adobe Accredited in InDesign, Illustrator and Photoshop.

Goal of initiative: to be able to promote myself as proficient in the leading industry software

Metrics to measure success: attending the software skills course each week at UoW, building my hours and knowledge.

Target Market

Industries

In 2021, we're targeting the following industries where we'll sell our product and reach out to customers:

Anxious and Axiety profiled customers on social media

This includes written articles about the benefits of emersive therapy and the connections we can have with the VR world. Example: Psychology, doctors, occupational therapy, app store.

Buyer Personas

Within our target market(s), we've identified the following buyer personas to represent our ideal customers:

Natasha - Anxious person female but able to operate in the wider social sphere

Natasha is 18-45 years old. She works in administration/ online/digital marketing for a living and spends her free time: juggling lots of commitments, family, business, home, older relatives. Her life is making her anxious and she is exhausted by this constant bombardment. She has other apps for self-help, healing and breathing, self-actualization and is happy to use these items to enhance her life in some way, but she needs a deeper connection. Her lifestyle is one where technology is helpful. She is connected to social media via apps in her phone, her watch and TV, she needs a simple method of instinctual interaction.

Her lifestyle is one where she needs time for herself but she never finds it. She desires and escape but cannot physically leave due to young family. Ultimately, Natalie wants to overcome her anxiety through emersion into a safe space where she can visit and fill with her happier self, the App will help her organize her thoughts and her emotions in a way that will make her feel satisfied with the small amount of free time she can take. Scahill Design will aim to assist people like Natalie in using technology that can solve her emotional needs that are not being met by her day-to-day lifestyle.

Jesse – young person male or female anxiety from teenager threats and society needs

Jesse is 16-20 years old. They are college/school leaver and have part time employment and spends his/her free time on social media, trying to break from it from time to time, but feels addicted to the need to know what's happening FOMO, they could be only child or part of a larger family, a young person still developing ideas about how their emotions seem to lead them and not them being able to control them. 5 minutes away from the threat of expectation, is what this app will give them. Ultimately, Jesse wants to be able to develop better understanding of themselves , and connect better with their peers in personal or professional challenge(s) Scahill Design will aim to assist Jesse in finding her way, help them deal with life's pressures and how their anxiety can be muted for a while by using the app.

Competitive Analysis

Within our target market(s), we expect to compete with the following companies:

1. **Calm App**

Products we compete with: award winning Apple App Store app 2017. They have diversified to phone app, apple watch and Apple TV. So a broad market approach. It is based on affirming techniques. And talks from recognized Drs and psychologists.

My project would be for a different mindset available on laptop and mobile phone for people to interact with. My App will be self-driven, people decide where they want to go – what path to choose and how they wish to interact.

Other ways we compete: the same market, same tech savvy people, but there are also motivated to try other similar things so this could work in my favour.
I would boost my promotion of the app by inviting others to write about the benefits of handling emotions well.

2. **Mindshift CBT – Anxiety relief**

Products we compete with: they have a psychological approach using Cognative Behavourial Therapy, way to help anxiety. A proven discipline and backed by Anxiety Canada Association, using exercises that reframe thoughts and stay grounded.

Other ways we compete: Same interested parties who would use this app and mine too. I think people who are motivated to use this would be the type of person to target with marketing of my own App.

3. **Dare: Anxiety and Panic relief**

Products we compete with: best mobile app award 20-20, best anxiety app 2019.
Uses audio encouragement and ways to help ease a panic attack, reducing stress and worry, and negative thinking. Yearly subscription $59.99.

Other ways we can compete: there SOS button gives help within the app – my idea is where you could link through to national support services, Samaritans, CAMHs, NHS direct. Creating a better safety net. Particularly for the Jesse profile. Vunerable young people*

*Stat: **Self-harm and suicide** A quarter (25.5%) of 11 to 16-year-olds with a mental disorder had self-harmed or attempted suicide at some point, compared to 3.0% of those who were not diagnosed as having a mental disorder. In 17 to 19-year-olds with a mental disorder, nearly half (46.8%) had self harmed or made a suicide attempt https://digital.nhs.uk/news-and-events/latest-news/one-in-eight-of-five-to-19-year-olds-had-a-mental-disorder-in-2017-major-new-survey-finds)

4. **Healium VR and AR solutions.** *https://www.tryhealium.com/#stories*

This software is the closest thing I have found to my initial idea, it has VR applications through the Oculus Headset and an AR application App for mobile devices. The background reading from the website illustrated the points I have been researching about the benefit of VR on Anxiety problems and the health benefits. This program is my biggest competitior.

Market Strategy

Product

How will this product solve the challenges described in your buyer persona description(s)? *The use of the AR design would provide competition to the Healium App, the personas of Natasha and Jesse, would be motivated to download an App to provide quick top level help and with more time spent in the app deeper levels of discovery could be made.*

What makes this product different from the competition?
My app will encourage more interaction in the scene, seeking out answers and not passively participating.

Price*

Pricing for the mental health apps range from $9.99 per month (AR Healium), to £59.99 per year for Calm app. I would pitch my App at the £5 per month or £59.99 per year approach as per Calm… I think being able to add content along the way, will keep the product fresh and ability to provide feedback in the app would ensure that the users tell us what feels right, what works. A 360 approach would be beneficial – just like a therapy meeting – progress needs to be marked, and the user can play a part in their own journey.

*The market for XR technology is growing, with projections for 2023 valuing it at over 18 billion U.S. dollars. https://www.statista.com/topics/6072/extended-reality-xr/

Promotion

How will I promote this product?
Social media… Instagram (Jesse) and Facebook (Natasha), market segmentation is easy to gain the right audience. I would also see additional content being created and uploaded to the app. New paths, new questions to be asked and interacted.

Process

How will the product be delivered to the customer?
Download through the Apple store or Google play store.
Is it an ongoing service? How will you support their success with your product?
A yearly subscription, perhaps an initial few questions to find out where the player is in the App and a way of checking progress of helping the anxiety.

Physical Evidence

Where is the product displayed?
Online advertising, on social media, endorsements and snippets of the app views.

Budget

Over the course of [current year], given the cash allotted to the Marketing team, we expect to invest in the following items to ensure we meet the objectives outlined in this marketing plan:

Marketing Expense	Estimated Price
Marketing Software	*£196,000 (Cost approx. via web search)*
Event 1 [Hosting]	*£232 (Cost approx. via web search)*
Content Sponsorship [time period of campaign]	*….?*
Pay-per-click - *Facebook*	*96p per 1000 cusotmers*
Advertising on Instagram	For CPM, or **cost-per**-impressions, advertisers **pay** £4.88 **per** 1000 impressions

Marketing Channels

Over the course of 2021 we will launch/ramp up our use of the following channels for educating our customers, generating leads, and developing brand awareness:

Website

Purpose of channel: Brand Awareness
Metrics to measure success: 50,000 unique page views per month

App store

Purpose of channel: sales tool
Metrics to measure success: 50,000 downloads

Instagram

Purpose of channel: engagement through images and to target audience 16-20
Metrics to measure success: 50,000 click throughs to app

Facebook

Purpose of channel: engagement with target audience
Metrics to measure success: 50,000 click throughs to app

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