



DXB311

A1 - Project Research Seminar

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Introduction



About me

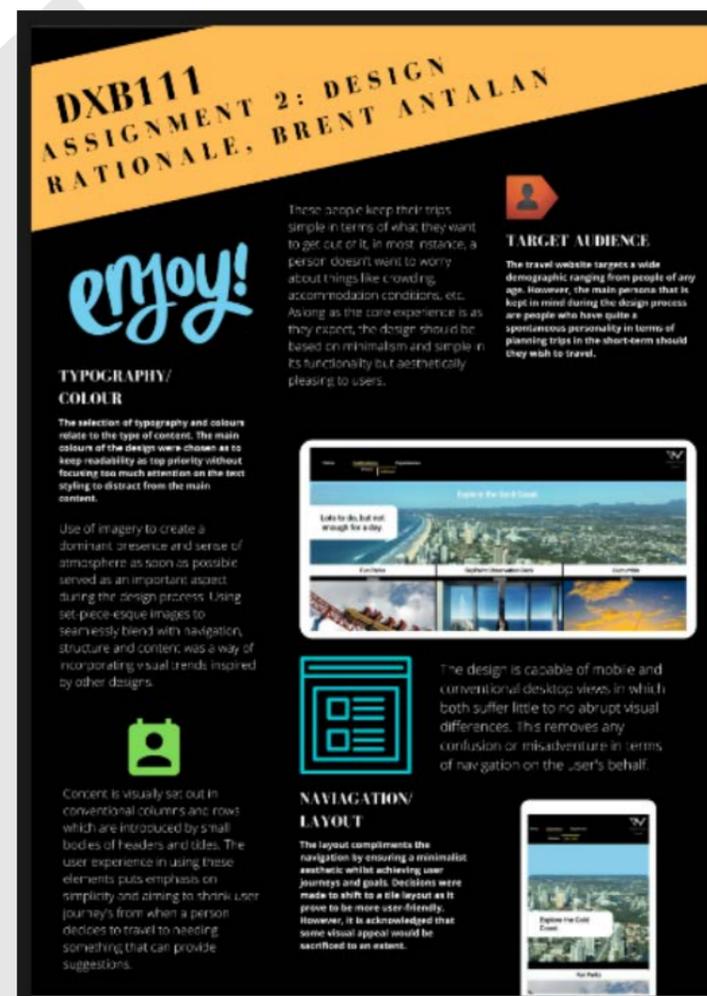
- I started my Bachelor of Interaction Design course back in July of 2019.
- Just started my third and final year, expected to graduate in 2022.
- My interests lie in web and app design but am also open to explore branching areas of design.
- I like to pursue a design career particularly in UX/UI, or a similar role that contributes to those areas.

Introduction



The work I have produced so far within my discipline has explored many instances of interactive experiences across a variety of industries and briefs.

These would include a few collaborative efforts with real-world partners as well as portfolio-related pieces that helped in developing my design process and skills.



RESEARCH

Existing Branding

- Hulsbosch - Woolworths rebrand
- Captures brand truth through communication of iconic message, 'The Fresh Food People'
- Sense of welcome and wellbeing
- Simple and recognisable



Brand Style



The styles of each brand have the commonality of vibrant and 'playful' elements, especially colour. Although the emphasis of green is fundamentally crucial to the brand's vision, it helps with the unification with brand partners. The concept should be enough to distinguish the research centre from the core style without becoming too separate and disconnected from the target audience as well.

Aesthetic Inspiration

Hulsbosch's case study incorporates iterative designs that effectively represent their ideas for different projects. Their design journey inspires a great deal of combinations that can influence the process of iteration. They were capable of developing many options that allows for clear and concise selection of elements that align with brand collaborations.



IxD Area of Interest - AR/VR/MR



Established technology with emerging applications set within various industries. Potential for 'Designing Ludic Encounters' as the gaming industry commits to virtual forms of media experiences.



- Virtual Reality has proved to be more applicable for developers in comparison to AR due to integrations with 3D-based engines.



- Augmented Reality has still yet to find comfortable applications that don't necessarily raise concerns over precision and efficiency.



- People still prefer to use what they are accustomed regarding responsiveness and convenience.

IxD Area of Interest - Interactive Inputs



Based around the idea of a 'satisfying' experience. Simply to enjoy what is being done in performing these actions/inputs. Motion tracking could be a viable visual link to virtual assets.

Fidgety actions can be utilised to produce ludic outcomes. Manipulation of an AR-based object perhaps can have ludic experiences for the user.



- Many toys for children are designed to engage them in activities that develop their cognitive abilities.



- For example, Play-doh is ludic through its nature of being able to be molded or sculpted into any form of shape to create anything the user wishes.

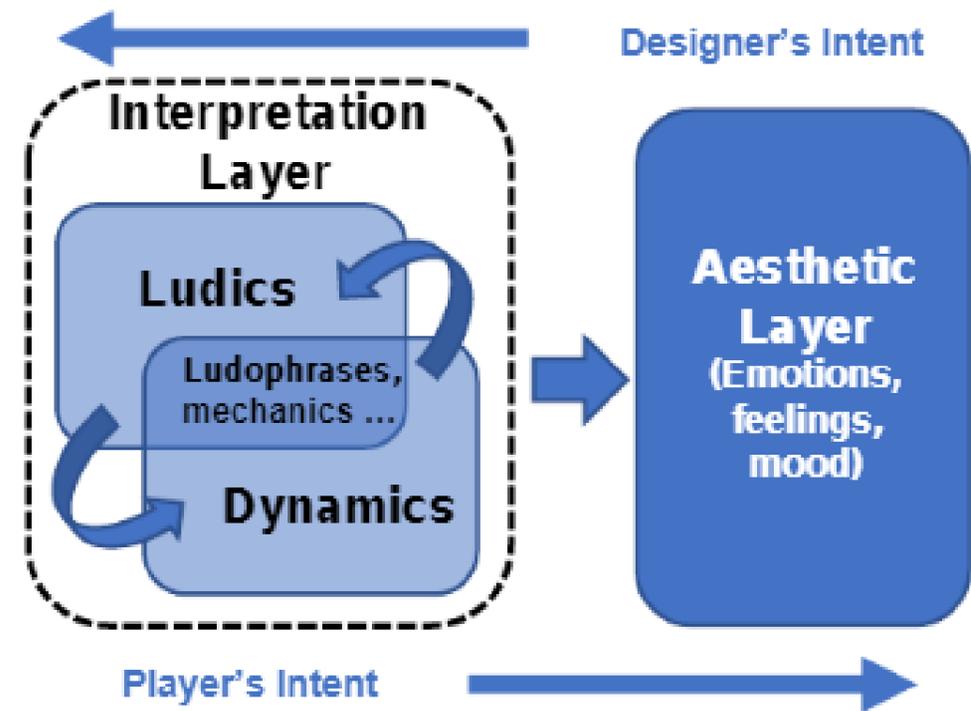


- The transition to touch-input from keypads was innovational due to its possibilities of gestures, which would introduce more dynamic ways of interaction.

Contextual Research - Ludic Theme



Figure 1. The Ludic Framework



- This figure found in Frederic Seraphine's theory of meaningful gameplay explores the ludic influences on dynamics which is distinguished by the intents of the player and designer respectively.
- My findings regarding this particular framework suggest that the player will lean towards aesthetics to determine what they feel during their experience.
- The player's experience can only be influenced so much by the designer with them being limited to the interpretation of a game's mechanics

Contextual Research - Relevant Literature

Table 4: Post-Use Survey Question: How was this device useful in your daily life?

#	Question	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1	This device helped me focus better	4.17%	4.17%	25.00%	58.33%	8.33%
2	This device provided me with physical stimulation	4.17%	4.17%	0.00%	54.17%	37.50%
3	This device helped me relax	4.17%	0.00%	37.50%	50.00%	8.33%
4	This device helped me spend less time on my phone	4.17%	20.83%	20.83%	41.67%	12.50%

Design and Analysis of Cognitive Focus Devices

- The findings on the right show results regarding user satisfaction and feedback involving a designed fidget device.
- This analysis claims that majority of users were satisfied with their experience with the product.
- After investigating this paper further, I found the table that suggests that people were more focused with the help of the device identifies a link with attentiveness.

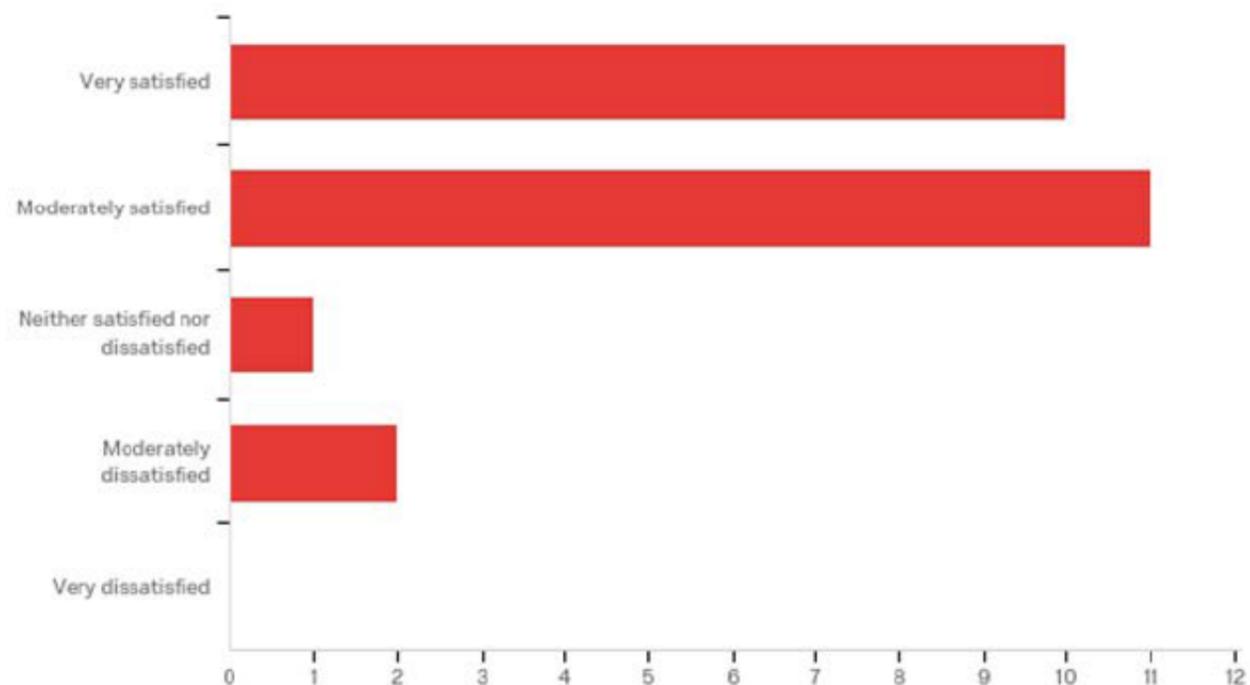


Figure 25: Feedback of Question Asking How Satisfied the User was with the Product

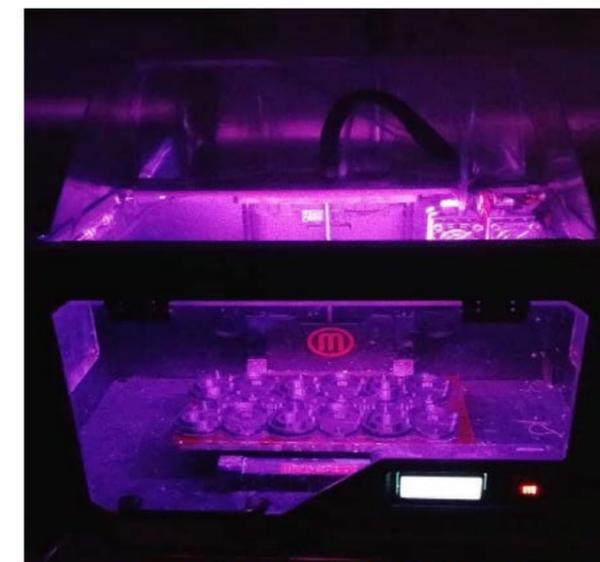


Figure 18: 3D Printer Printing Fidget Devices

Contextual Research - Design Insights

Everyday Attention and Lecture Retention

	Block							
	1	2	3	4	5	6	7	8
ATTENTION RATING								
Mean	6.0	6.3	5.9	5.9	5.4	5.2	5.2	4.9
Std.	1.0	1.0	1.0	0.7	1.1	1.1	1.2	1.0
FIDGETING (MICRO)								
Mean	12.2	10.0	12.1	11.9	11.4	11.1	12.1	14.0
Std.	8.0	7.0	8.1	6.7	6.9	6.0	8.5	9.1
FIDGETING (MACRO)								
Mean	4.8	4.2	4.6	6.2	5.7	4.3	5.8	7.5
Std.	3.6	3.6	3.9	4.9	3.9	3.0	4.2	4.5
RETENTION TEST								
Mean	58.3	77.7	71.2	64.8	49.1	49.0	82.3	55.3
Std.	29.6	38.5	33.9	32.6	46.7	37.4	25.2	39.9

| Subject means and standard deviations (std.) as a function of block for attention ratings, fidgeting (micro and macro), and performance on the retention test.

- It has been observed that fidgeting also has connections to performance arousal and that tasks that people find boring tend to fidget indicating different levels of attentiveness and combating diminishing attention.
- It is evident in this study that there are many factors that are involved within an attention-sustained task such as memory, induced stress, and being prone to fidget.
- Findings suggest that the link between fidgeting behaviours and attention spans as a function of time also has an impact on memory performance.
- While the data shows there can be a performance benefit involving fidgeting, it cannot be sustained with other potential variables.

Contextual Research - Design Insights

Fidgeting as self-evidencing

Table 1. Examples of fidgeting in different modalities for typically developing adults.

Primary Modality	Examples
Visual	Doodling Visually tracking a rotating fan Absentmindedly arranging objects on desk
Vestibular	Rocking on a chair Absentminded head nodding
Tactile	Playing with own hair Touching own face Rubbing a soft sweater
Auditory	Clicking a pen Tapping foot Humming
Taste	Chewing gum Sucking on a toothpick
Proprioception	Bouncing one's leg

- Essentially, if performance arousal can be optimised in the context of sport, there is the potential for stimulating fidgeting behaviours that target productive intrinsic outcomes.
- Often linked to symptoms of psychological disorders and anxiety, fidgeting can be seen as a general reflex prompt for people. There is a possibility of targeted fidgeting to provide an influence for incidental memory. This approach still has uncertain implications but is still viable to what has been shown in theory.
- Fidgeting specifically has no intrinsic value in terms of any contribution to an overall outcome.
- Scenarios where people are in a state of anticipation tend to be a prevalent trigger for fidgeting.

Contextual Research - Relevant Literature

Understanding The Immersive Experience

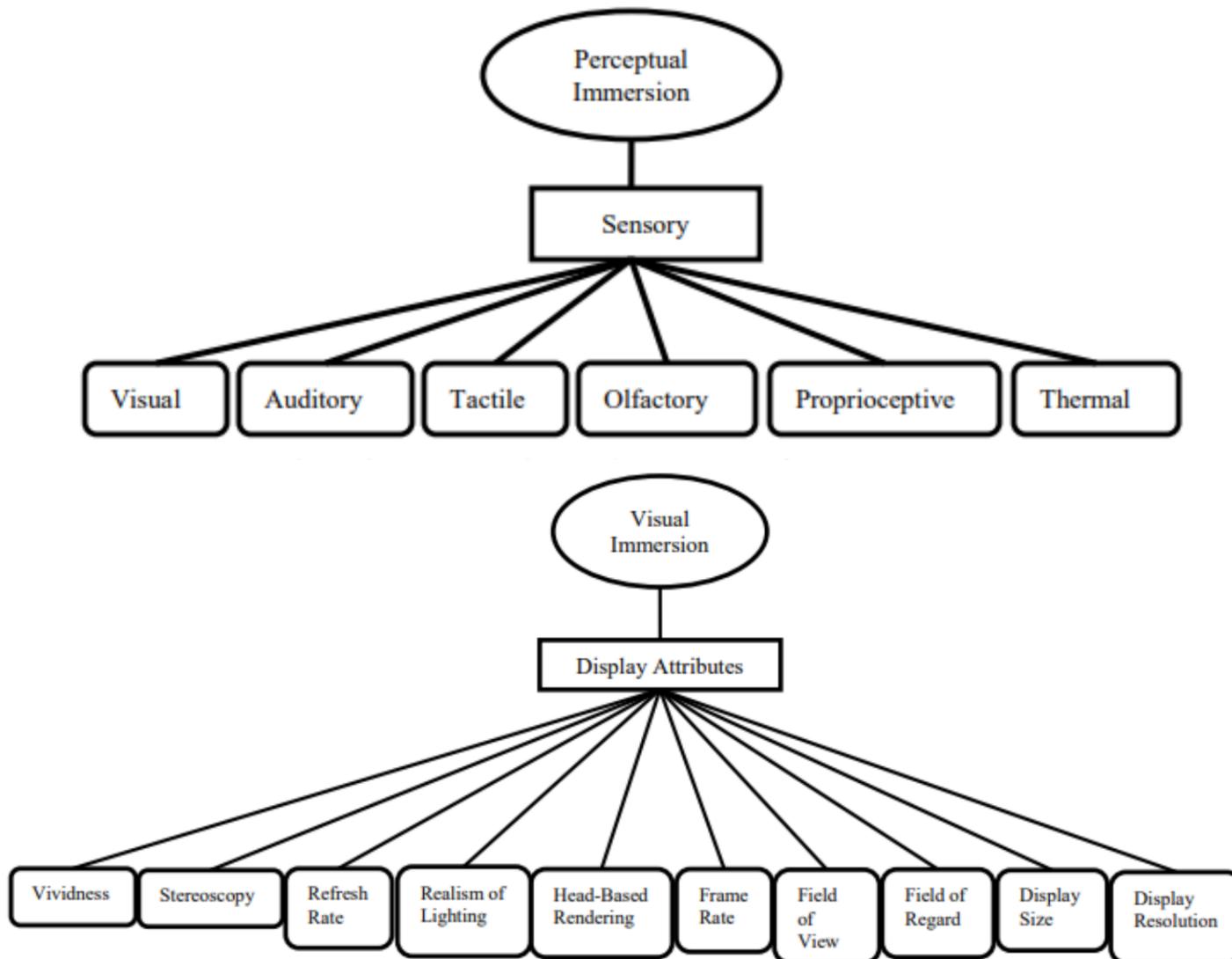


Figure 3: Display attributes related to visual immersion.

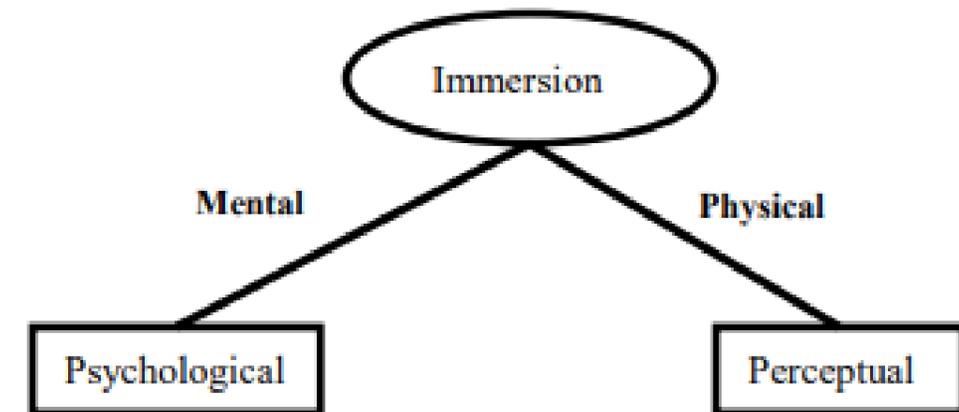


Figure 1: The dichotomy of immersion.

- The implication of immersion relates to establishing a personal connection with the user that takes them beyond just an initial interaction.
- Evocation of a replicated reality from what is presented. Once that connection is established the level of engagement from the user becomes volatile, this provokes different ways to progress further to an eventual outcome.
- This kind of approach has potential for the Interaction Design project by bringing a dynamic user journey involving variety and choice as opposed to a linear and direct approach.

Contextual Research - Design Insights

Gamification: Theme Parks

Rides in theme parks are often focused on linear experiences where the audience is expected to only observe the content that is presented.

Special effects play a big role in attractions relating to iconic franchises and brands due to the nature of characters and the worlds they are set in recreating the atmosphere seen in other media.



The idea of the shooting gallery is implemented to introduce active user experiences through projectile-based inputs, an orthodox method tied to sensors and screens.



Contextual Research - Design Inspirations

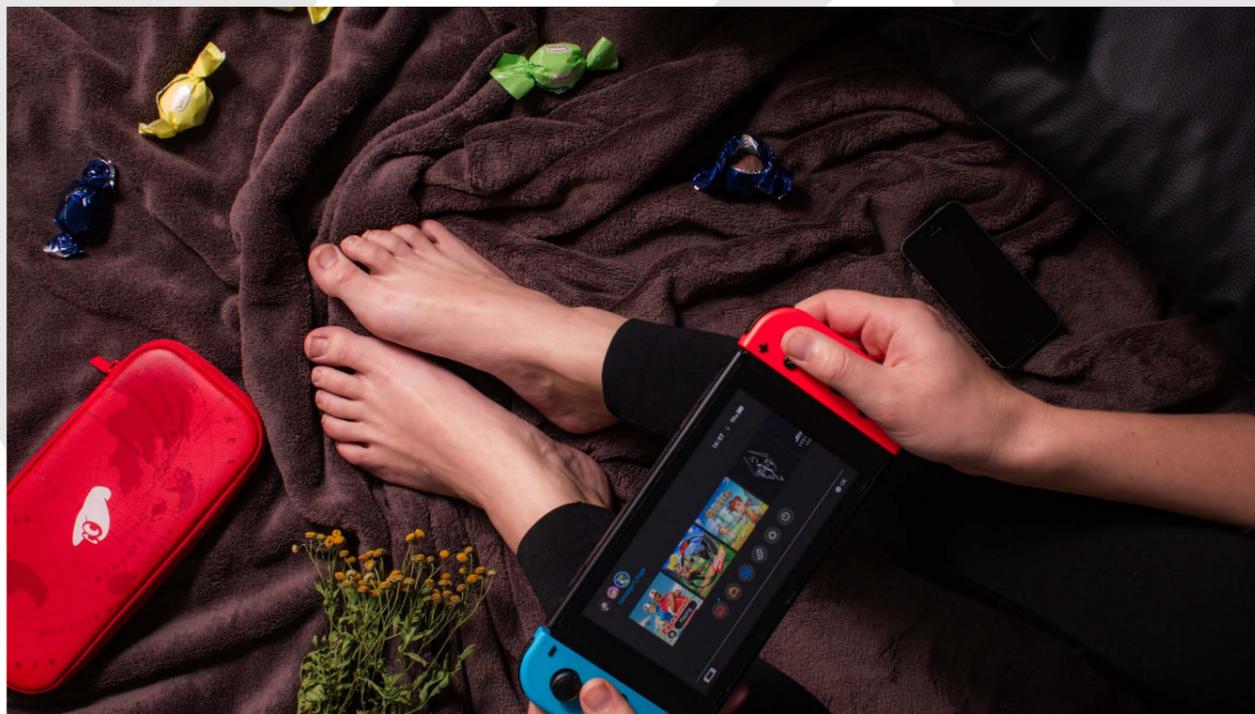
Controllers



If the direction is to design what is essentially a custom controller with specialised inputs instead of buttons, there will be constraints to achieve the intended interaction.

Unity houses all the capabilities for a program to suit the type of interaction required on the user's behalf, from physics to graphics and audio to be used as a means of output.

Arduino is needed to put code in and set up specific behaviours for hardware. The connection and responsiveness between sensors and the point of interaction is imperative if the interaction is to become successful.



Contextual Research - Design Inspirations

Adaptive Controllers

- The adaptive controller was designed by Microsoft in an attempt to remove barriers for those who have mobile disabilities that affect their gaming experiences.
- It creates a revamped kit of user inputs that can be customised specifically to match the needs of the user. With the assist of this design alone the experience for people with disabilities is less restrictive.
- This inspires a direction in which a different approach to user inputs can drastically change the interactive user experience. The concept of a medium that can be just as successful in another form factor allows flexibility for audiences.



<https://www.xbox.com/en-AU/accessories/controllers/xbox-adaptive-controller>

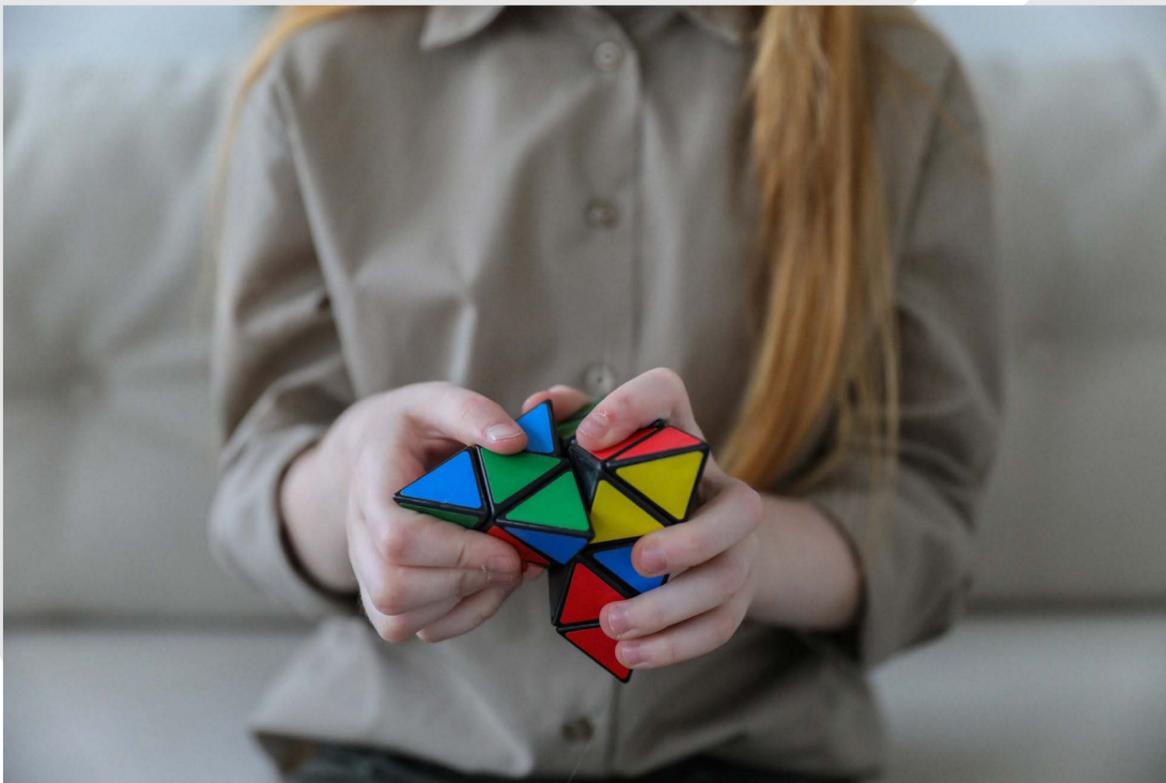


Opportunity/Design Space



Interactive gestures in relation to cognitive focus devices

- Fidget devices are in a way a tangible deterrent for anxiety and stress although it prevents efficient productivity in some scenarios.
- Stress and anxiety can have negative effects on a person's health in which having high severe levels of each can impact one's memory.
- The balance of suppressing anxiety while not losing too much cognitive performance on tasks is an opportunity to be considered in the design brief.



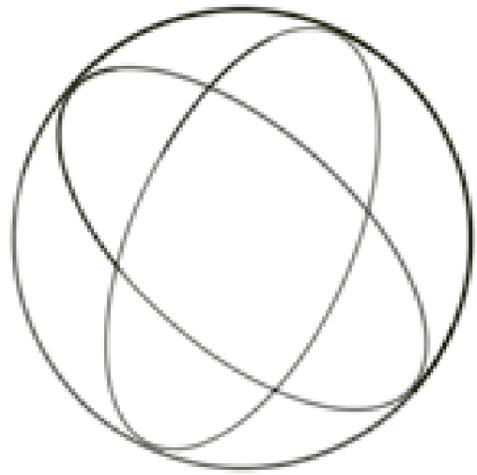
Early Design Concepts



The core foundation for the design space is to add meaningful output to a fidget device. Therefore, acting as a controller alternative targeted towards people who experience higher levels of anxiety.

- Essentially, all of the functions present on a device like the fidget cube would have a purpose to be binded and have a use in external programs or apps.

Early Design Concepts - Fidget Globe



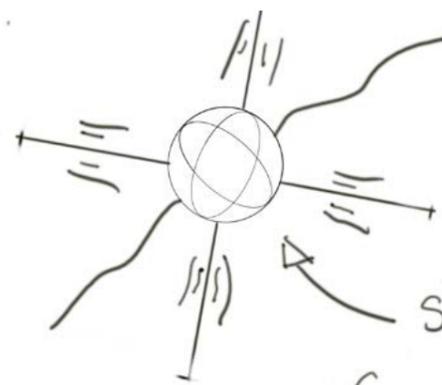
← Normal State

- The concept of a spherical object similar to the function of a stress ball. It takes in a user's squeezing action as a physical mechanic to its interaction.



← 'Cushion Interaction'

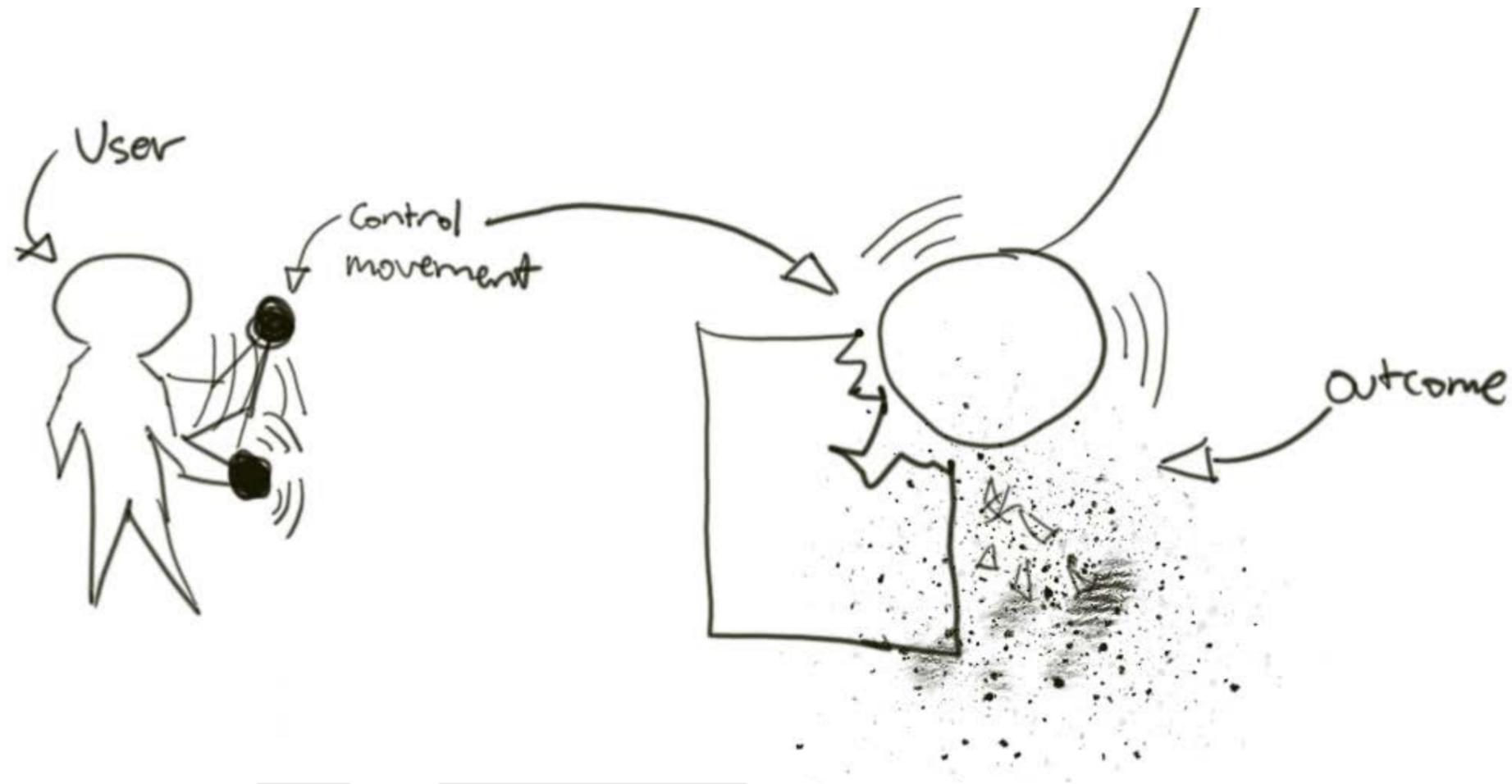
- It provides a haptic sense of applying pressure to replicate the satisfaction of a cushion. There is also consideration of additional sensors that would augment other tangible details.



← Suspension State
• Can be pulled and released.

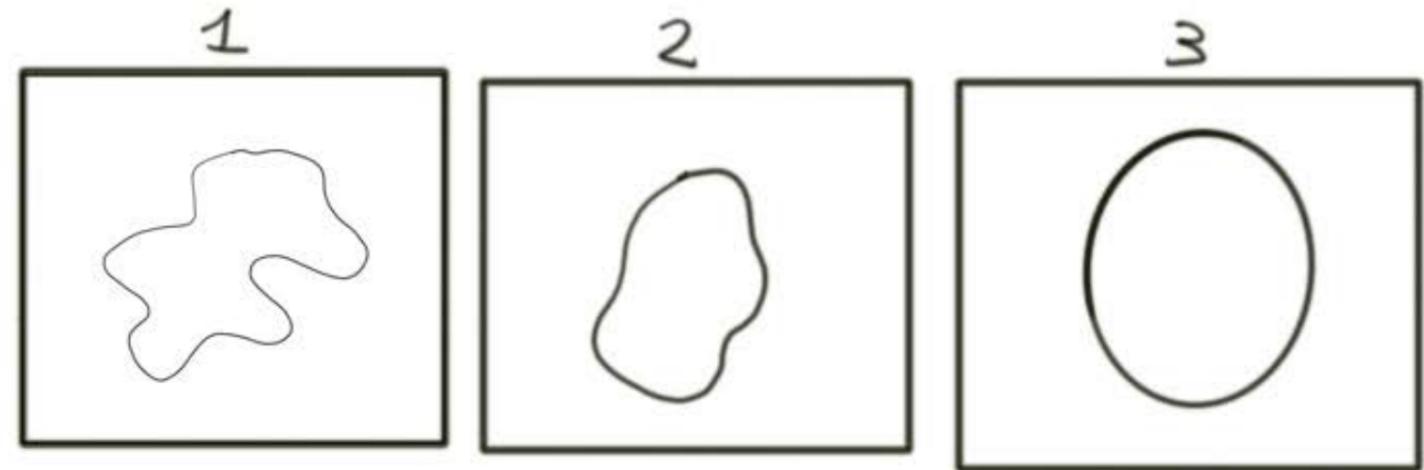
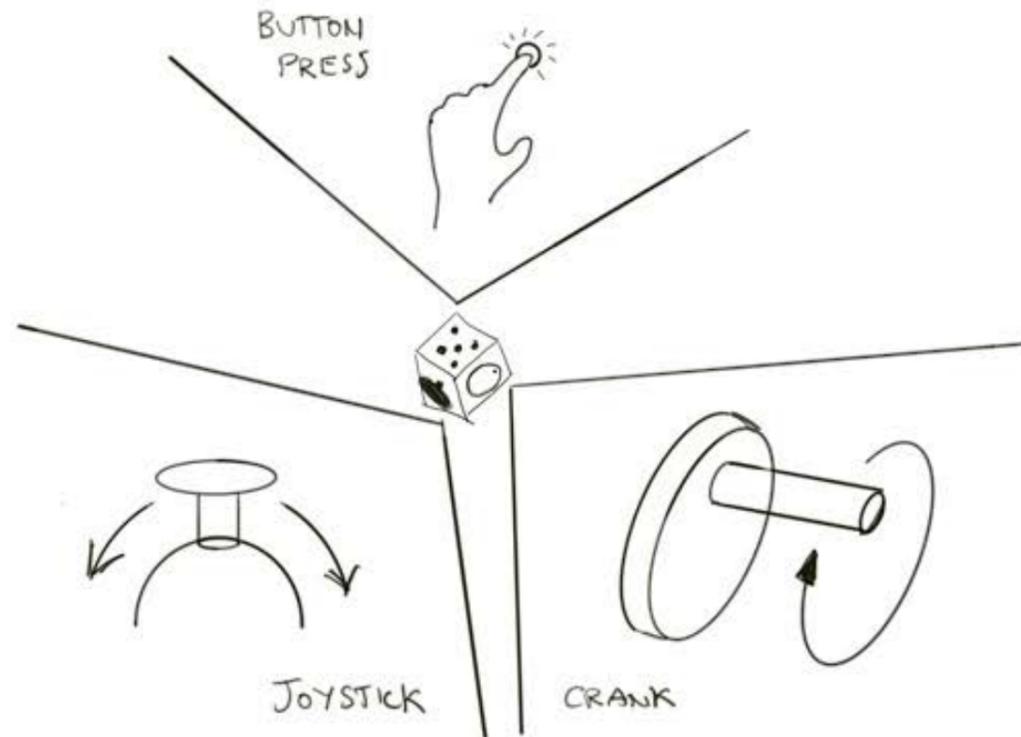
- In addition, the 'globe' would incorporate some form of elasticity into its fabrication. This would allow any part or section of the globe to be punctured or pushed in by hand.

Early Design Concepts - Fidget Sandbox



- This concept of a sandbox sets the user free in a set space with various options and opportunities to interact within that space.
- Objects would be influenced by 'playful' physics mechanics to add a level of experimentation and discovery for users.

Early Design Concepts - Object/Terrain play



- Manipulation of object properties.
 - Density?
 - Shape?
 - Texture?

- This last concept takes the specific haptic details of a fidget devices' inputs, and uses that feel to simulate a lasting effect on objects or generated terrain.
- It is similar to the previous concepts in which it heavily relies on fidgety actions

The Direction - Design brief

DRAFT DESIGN BRIEF: BRENT ANTALAN n10583645

Working Title of your Project:	<i>Interactive fidget interface and visualisation</i>
IxD Area(s) of Specialisation:	Interactive imagery through impulse response interface
Summary of Project Background & Opportunity Space:	<ul style="list-style-type: none"> Fidget devices are a common deterrent for scenarios evoking high anxiety levels. These devices trigger sensations that otherwise keep the user at ease, however, the experience becomes futile once the user is engaged with a task no longer needing the device. There is an opportunity to introduce another layer of purpose and functionality to these types of devices and provide an interactive experience that augments the ludic aspect. The project aims to stand by itself without necessarily catering to a particular design problem. It is purely a 'ludic' experience first in an attempt to incorporate an unconventional user input and interface.
Who is your design for?	<ul style="list-style-type: none"> People who experience anxiety and prefer a gadget or device that helps suppress their discomfort.
Potential attributes/features of Design Project	<ul style="list-style-type: none"> Visual/Audio elements to coincide with the user inputs. A tangible interface inspired by existing fidget gadgets. Game-inspired mechanics specific to the intended interface. Alternative to traditional gaming peripherals.
Other Design Requirements/specifications for the project:	<ul style="list-style-type: none"> Addressing the theme of Ludic Engagement. Elements of interactivity Use of sensors that cooperate with intended interactive inputs. Balance of robustness with intended tactile feel. Functionality and responsiveness Basic visual/audio outcome – program/application to take advantage of interactive inputs.
5 keywords for your project	<ol style="list-style-type: none"> Ludic Experimental Nostalgic Gratifying Tactile

So far, the research phase has shown me the potential of the opportunity to design a form of output for fidget devices. I intend for users to interact with them while simultaneously getting a ludic experience out of them.

This would add another layer to their function not only to combat anxiety and stress but to emphasise productive engagement through their new output.

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